



RULES FOR COMPETITIONS

BOOK 3. MATERIAL RULES

Rationale and Description of Change

This page will be removed in the official rules book, this page is intended to provide information and background to the reviewer / reader

The proposed restructuring of the Material Rules does change the substance of the rules; it reorganizes them to be clearer, more precise, and easier to use for referees, weapons control, and federations.

What Does NOT Change

1. Technical requirements
2. Safety standards
3. Governance
4. Homologation requirements

Every article and requirement from the 2025 Material Rules has been carried over and is traceable: either into the new Material Rules Book or into the new Materials Homologation Handbook, with explicit mappings for legal and rules verification.

The new structure will now have two separate books: 1) Material Rules - competition-side obligations (what is allowed on the piste) and 2) Materials Homologation Handbook - manufacturer-side test procedures (how equipment is tested and homologated), which are highly technical and relevant mainly to manufacturers, laboratories, and the SEMI Commission.

This separation allows the FIE to respond more quickly and safely to technological developments in blades, masks, clothing, and scoring apparatus.

For our stakeholders, the Material Rules Book becomes simpler: all information needed to make a ruling is in one place, without needing to consult homologation procedures or laboratory test descriptions.

The Materials Homologation Handbook will follow a controlled SEMI process, with transparent versioning and communication to federations and manufacturers, addressing past concerns about changes not being clearly communicated.

Adopting this structure is a necessary modernization step: it improves clarity, supports better training and translation, and provides a stable foundation for the next generation of equipment and safety standards.

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BOOK M — MATERIAL RULES

Chapter 1: Global Requirements

m.1 General Provisions

1. Scope

This Book sets out the material and safety requirements applicable to all weapons and equipment used in fencing.

2. Application, Amendment, and Precedence

1. This Book must apply to all competitions organized, sanctioned, or recognized by the FIE.
2. In case of conflict concerning material and safety requirements, the provisions of this Book and the official safety documents must prevail.
3. SEMI Commission reserves the right to modify or supplement the technical requirements and handbooks whenever developments in technology, experience, or laboratory testing allow improvements in safety or performance.
4. Any such modifications must be communicated to member federations and manufacturers through official FIE channels and procedures.

3. Definitions

1. Weapon must mean a foil, épée, or sabre conforming to this Book.
2. Equipment must mean components forming part of or attached to a weapon, including but not limited to clothing, protective gear, or device worn or used by a fencer or referee.
3. Official Safety Documents must mean documents issued by the FIE relating to safety standards, notices or safety directives through its official channels.
4. Competition must mean any FIE competition
5. Tip must mean the forward extremity of the blade, including the electrical tip assembly on foil and épée and the striking end of the blade on sabre.
6. Earth circuit must also mean ground circuit.

4. Mandatory Weapons Control Compliance

1. All weapons and equipment used in competition must comply with this Book.
2. Weapons and equipment used in competition must be subject to official Weapons Control procedures as set out in Chapter 5.

m.2 General Technical Requirements

1. Types of Weapons

There are three types of weapon: Foil, Épée, Sabre.

2. Conformity Requirement

1. A weapon must conform in all respects to the material, construction, and dimensional requirements set out in this Book.
2. A weapon that does not conform must not be used in competition.
3. Only members of the SEMI Commission or the Directoire Technique can require verification of conformity to the Book and to homologation requirements in Chapter 6.

3. General Safety Principle

1. A weapon must be constructed and maintained so that it does not intentionally or foreseeably cause injury beyond valid fencing actions.
2. Sharpening of the point or edges, grinding, filing, heating, or other methods that could create a cutting, slicing, or otherwise dangerous surface, are forbidden.

4. Prohibition of Circumvention

No component or modification must be used to circumvent the intent or effect of these Rules.

5. Functional Integrity

A weapon must remain structurally sound and functionally reliable under normal competitive use as set forth in this book.

Chapter 2: Weapons

Part 1: All Weapon Parameters

Refers to parts, requirements, and definitions related to all weapons.

m.3 General Construction of Weapons

1. Components of a Weapon

A weapon must be composed of the following components:

1. Blade;
2. Tang;
3. Guard;
4. Handle;
5. Socket.

2. Blade — General Construction

1. The blade must be constructed of flexible steel.
2. The blade must bend under normal fencing actions without breaking.

3. Blade — Material Requirements

For all three weapons, blades must be manufactured from maraging steel.

4. Blade — Surface Condition

The blade must not be sharpened, ground, heated, or otherwise treated in a manner that creates a hazardous surface.

5. Tang —General Requirements

1. The tang must form an integral continuation of the blade and must be manufactured from the same steel as the blade, in accordance with the material requirements of this Book and applicable technical handbooks.
2. The tang must be designed and manufactured so that it maintains the structural integrity of the blade–handle assembly under normal competitive use and foreseeable misuse, without undue risk of fracture or detachment.
3. Any transitions between the blade portion and the tang must be free of cracks or other defects that may compromise mechanical strength.
4. The tang must be securely fixed within the handle so that it cannot loosen or rotate under normal competitive use; fixing methods must comply with this Book and must not conceal prohibited devices, switches, or wiring.
5. No component, treatment, or modification of the tang may be used to circumvent the intent or effect of these Rules, including restrictions on handle length, guard geometry, or concealed devices

6. Guard — General Requirements

1. The guard must protect the hand and wrist without creating undue risk.
2. Material must conform with the requirements in the Homologation Handbook.

7. Guard — External Surface

1. The guard must be in a convex shape.
2. The external surface must be smooth.
3. The guard finish must not produce a distracting glare such as a mirror-finish or a finish that is highly reflective.
4. The guard must not include features that catch or hold the opponent's point.
5. The guard must not have a raised rim.
6. The guard must not feature any advertising.

8. Guard — Internal Padding

Internal materials must not enlarge the protective area beyond dimensional limits.

9. Guard — Mounting

The guard must be mounted and fixed between the blade and the handle with the convex face toward the front.

10. Handle — General Requirements

1. The handle must be composed of one or several parts
2. A handle with several parts is divided into a grip and a pommel or a grip and locking nut.
3. A handle must comply with the regulations intended to place the various types of weapons on an equal footing.

11. Handle — Structural Requirements

1. The handle must be securely fixed.
2. The handle must not contain sharp edges.

12. Handle — Design Restrictions

1. The handle for thrusting weapons must have a notch of 2mm minimum depth
2. Handles must not contain concealed devices, concealed wires or any component not expressly permitted under these Rules.
3. Throwing-assist mechanisms must not be permitted.
4. The handle design must not circumvent or indirectly avoid the dimensional limits set out in m.4.
5. The handle must not include any device or component that projects beyond the external perimeter of the guard.
6. No portion of the grip must be designed or shaped to increase the protection of the hand or wrist beyond that provided by the guard.

13.Handle —Special Shape (Orthopedic)

If the handle or glove includes any device, attachment, or special (orthopaedic) shape that fixes the position of the hand, the handle must:

1. Fix the hand in one, and only one, position on the handle; and
2. In that position, keep the tip of the fully extended thumb no more than 2 cm from the inner surface of the guard

14.Socket Assembly — General Requirements

1. Each weapon must contain a socket assembly.
2. The socket assembly must be fixed between the guard and the handle.

m.4 Weapon Measurements and Dimensions

1. Measurement Planes

1. Measurement planes A through E must define reference points for dimensional compliance.
2. These planes are all parallel to one another and perpendicular to the axis of the blade.
 - a. Plane A at the forward extremity of the weapon.
 - b. Plane B at the point where the blade exits the front convex surface of the guard.
 - c. Plane C at the rear surface of the guard.
 - d. Plane D at the junction between the grip and the pommel, for weapons that have a separate pommel; for weapons without a separate pommel, plane D is not defined.
 - e. Plane E at the rear extremity of the handle.

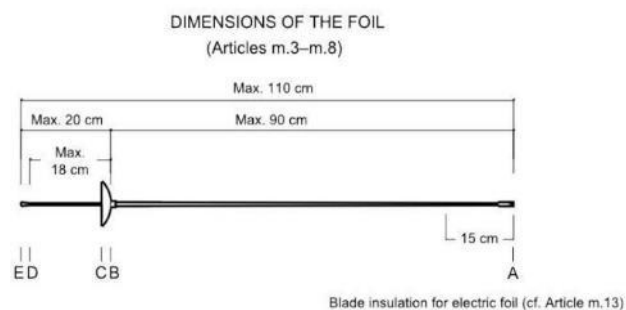


Figure 1: Planes of the weapon

2. Measurement Distances

Distances are measured along the axis of the blade between the planes where the blade is straight (perpendicular to the plane of measurement):

1. Total weapon length: the distance between planes A and E.
2. Blade length: the distance between planes A and B.
3. Handle length – with pommel: the distance between planes B and E
4. Handle length – without pommel: the distance between planes B and rear extremity of the grip
5. Guard depth: the distance between planes B and C

3. Measurement Procedure

Measurement procedures must follow provisions and process set forth in Chapter 5 (see m.57 and other applicable Weapons Control procedures).

4. Maximum Handle Length

1. Foil and Épée – without a separate pommel: Plane B to Plane E = 20 cm (see m.57).
2. Foil and Épée – with a separate pommel; Plane B to Plane D = 18 cm (see m.57).
3. Sabre: Plane B to Plane E = 17 cm (see m.57).

Part 2: Foil Specific Requirements

This section sets out the weapon-specific material, dimensional, and functional requirements applicable to the foil.

m.5 Foil General Characteristics

1. Nature of the Weapon

The foil is a thrusting weapon designed to register a valid touch by means of a spring-loaded tip connected to an electrical scoring apparatus.

m.6 Foil Dimensions and Weight

1. Maximum Total Length

The total length of the foil, measured between plane A and plane E of straight blade, must not exceed 110 cm (see Figure 2, m.4, and m.57).

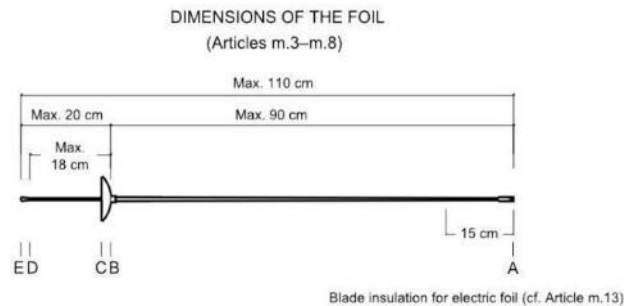


Figure 2: Dimension of the foil

2. Maximum Blade Length

The blade length, measured between plane A and plane B, must not exceed 90 cm (see Figure 2, m.4, and m.57).

3. Maximum Weight

1. For the purposes of Foil, total weight must mean the assembled weapon including the blade, tang, guard, handle, pommel or locking nut, socket, tip assembly, insulation, and internal wiring.
2. The body cord must not be included in the weight measurement.
3. The total weight of the foil must be less than 500g.
4. Weight must be determined in accordance with official Weapons Control procedures (see m.55 -5.57).

m.7 Foil Blade

1. Cross Section

The blade must be rectangular in cross-section.

2. Material

The blade must be manufactured to the material requirements set out in this Book and the Materials Homologation Handbook (see m.69).

3. Orientation

1. The blade must be mounted with the widest face horizontal.
2. The groove must be positioned uppermost.

4. Edge Treatment

1. The edges of the blade must be chamfered.
2. The chamfer must form an angle of $45^\circ \pm 5^\circ$.
3. The chamfer must measure $0.5 \text{ mm} \pm 0.1 \text{ mm}$ on each side.
4. The edges must be smooth and must not be capable of cutting.

5. Flexibility

1. The blade must demonstrate flexibility corresponding to a bend between 5.5 cm and 9.5 cm.
2. Flexibility must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The blade is fixed horizontally at a point 70 cm from the extremity of the button.
 - b. A 200 g weight (tolerance $\pm 1 \text{ g}$) is suspended 3 cm from Plane A.
 - c. The bend of the blade is measured from Plane A between the non-weighted and weighted positions (see Figure 3).

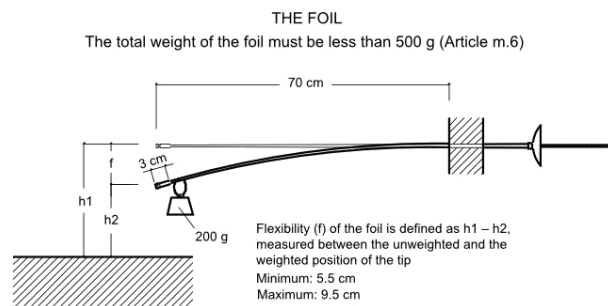


Figure 3: Foil blade flexibility verification

6. Curvature

1. The blade must not exhibit a curvature exceeding 1 cm.
2. The curvature must only be in the vertical plane.
3. The curvature must be near the center of the blade.
4. Curvature must be verified in accordance with official Weapons Control procedures in the following way (see Figure 4):
 - a. The blade is placed on a flat surface
 - b. The position of the curve is uppermost
 - c. The measurement is maximum distance between the flat surface and the blade.
 - d. The curvature must be measured as described above (see. m.57 for general measurement rules).

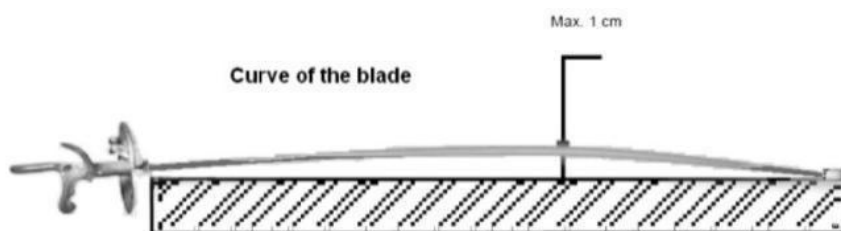


Figure 4: Foil blade curvature

7. Blade Tip

1. The diameter at the end of a bare blade closest to Plane A must not be less than 3.5 mm prior to threading.
2. No wrapping or artificial enlargement of the blade diameter must be permitted.

m.8 Foil Guard

1. Diameter

The diameter of the guard must not be less than 9.5 cm and must not exceed 12 cm.

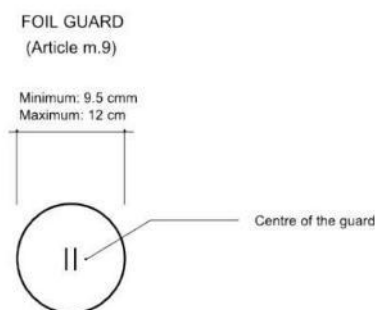


Figure 5: Foil guard

2. Position of the Blade

The blade must pass through the center of the guard.

3. Padding

1. The interior must contain padding of cushioning material.
2. Padding must not exceed 2 cm in thickness.

4. Gauge Compliance

The guard must be verified in accordance with official Weapons Control procedures in the following way:

3. The foil guard must pass through a cylindrical gauge of 12 cm diameter and 15 cm length (see m.4 and m.57 for dimensional checks).
4. The blade must be parallel to the axis of the cylinder.

5. Foil Guard Socket Assembly

1. Inside the guard there must be a socket into which the body wire is plugged.
2. The socket assembly must ensure reliable electrical contact during all fencing actions (see m.36-m.37 for body wire and plug requirements).
3. The socket assembly must be secured to prevent disconnection during the bout.

m.9 Foil Electrical System

1. Electrical Wire

1. The foil must contain a single insulated electrical wire.
2. The wire must be securely affixed by glue within a groove along the entire length of the blade.
3. The wire must permanently connect the pointe d'arrêt to the socket.

2. Electrical Resistance

1. The total electrical resistance of the foil must not exceed 2 ohms.
2. Resistance must be verified in accordance with the Weapons Control procedures.

3. Circuit Function

1. When the tip assembly is not depressed, the circuit must be closed.
2. When the tip assembly is depressed in accordance with this Book, the circuit must be interrupted.
3. The electrical characteristics of the foil must be compatible with the central judging apparatus (see Chapter 4 and m.43).

m.10 Foil Tip Assembly

1. Tip Assembly Components

A tip assembly must consist of:

1. An insulated pointe d'arrêt
2. A shank that is smaller in diameter to the pointe d'arrêt
3. A spring
4. A barrel that is a separate hollow cylindrical body

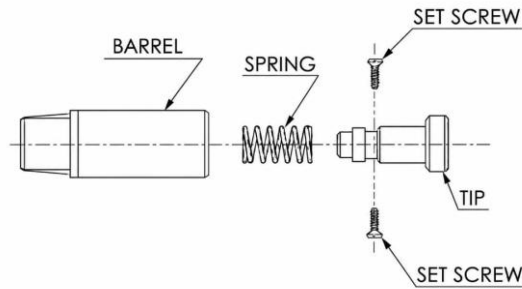


Figure 6: Foil Tip Assembly

2. Tip Assembly Material

1. The components of the tip assembly must be manufactured from materials that:
 - a. Provide sufficient mechanical durability under normal competitive use;
 - b. Maintain consistent electrical performance as required by this Book; and
 - c. Resist corrosion or degradation that could affect safety or electrical function.
2. Material specifications and approved alloys must be defined in the Materials Homologation Handbook.

3. Pointe d'arrêt Dimensions

1. The pointe d'arrêt must be cylindrical.
2. The front surface of the pointe d'arrêt is flat and perpendicular to its axis.
3. The diameter of the pointe d'arrêt must be between 5.5 mm and 7 mm.

4. Pointe d'arrêt Edge Dimension

The edge of the pointe d'arrêt must be either:

1. Rounded with a radius of 0.5 mm; or
2. Chamfered at 45° with a width of 0.5 mm.

5. Pointe d'arrêt Mounting

1. The pointe d'arrêt must be retained within the barrel in at least two places equidistant from each other.
2. Other methods of mounting must be approved by the SEMI Commission

6. Shank - Construction

1. The shank must be fixed to the pointe d'arrêt.
2. The shank must have a smaller diameter than the insulated head of the pointe d'arrêt.

7. Spring – Construction

1. Springs must be manufactured from materials capable of maintaining their elastic properties under repeated compression during normal competitive use.
2. The spring must be capable of lifting a weight of 500 grams ± 2 grams (see m.61 for required test weights).

8. Barrel – Construction

1. The barrel must be a length from 7-8mm
2. The barrel must have a smooth external surface.

9. Tip Assembly Travel

1. The total travel of the pointe d'arrêt must not exceed 1 mm.
2. Travel must be verified in accordance with official Weapons Control procedures and the checking apparatus requirements (m.61) in the following way:
 - a. Gauge measurement with a tolerance not exceeding ± 0.05 mm (see m.57 and m.61 for tip travel gauges).

10. Tip Assembly Circuit Function

1. The pointe d'arrêt must maintain electrical contact with the earth circuit of the foil when not depressed.
2. The circuit must be interrupted when the pointe d'arrêt is depressed.
3. No wrapping, coating, or artificial enlargement of the blade diameter must be permitted.

11. Tip Assembly Pressure

1. The pressure required on the pointe d'arrêt to interrupt the circuit must exceed 500 grams.
2. Pressure must be verified in accordance with official Weapons Control procedures in the following way:
 - a. A weight of 500g ± 2 g must be lifted by the spring of the tip assembly (see m.61).

m.11 Foil Blade-Tip Assembly Interface

1. General Requirement

1. The tip assembly must be securely fixed to the blade by means of a threaded interface in accordance with the foil weapon.
2. Only fixing methods expressly permitted by this Book must be allowed.
3. The interface region is where the barrel is fixed to the blade.

2. Minimum Blade Diameter

Prior to threading, the blade must not have a diameter of less than 3.5 mm at any point within the interface region.

3. Threaded Diameter Blade

The diameter of the threaded core (opposite to the widest part of the blade) at the edge of the blade must not be less than 2.7 mm (Threading - SI 3.5×0.60).

4. Threaded Portion Length Blade Groove

1. The width of the groove of the blade at the threaded portion must not exceed 0.5 mm.
2. The depth of the groove of the blade at the threaded portion must not exceed 0.6 mm.
3. Depth of the groove is measured on the diameter of the threaded core.

5. Threaded Portion Length Barrel

1. Only the forward half of this length must be threaded.
2. The remaining half must engage a smooth internal bore within the tip assembly.

6. Fixing Method

1. Only metal-to-metal fixing must be permitted.
2. Soldering, brazing, or any heating process that may alter the temper or mechanical properties of the blade is prohibited.
3. Alternative fixing methods may be authorized after approval of the SEMI Commission.
4. The threaded interface must not loosen under normal competitive use.
5. Material wrapped around the surface of the bare blade is prohibited (see m.2 for general safety and circumvention rules).

7. Security of the Tip Assembly

1. The tip assembly must remain securely engaged with the threaded portion of the blade during normal competitive use.
2. If the tip assembly becomes loose, disengaged, or partially unscrewed, the foil must be deemed non-compliant and must not be used until properly repaired.
3. No external clips, locking devices, or additional components may be added outside the defined tip assembly in order to secure the tip.
4. Only components forming part of the approved tip assembly design must be permitted (see m.59-m.60).

m.12 Foil Insulation

1. Insulation Coverage

1. The cylindrical body of the tip assembly and the blade must be fully covered with insulating material.
2. Insulating material must extend rearward from the edge of the barrel along the blade for a length of 15 cm $\pm$ 1 cm.
3. The insulation must be continuous from the barrel onto the blade, with no uninsulated gap at the junction.

2. Insulation Materials

Insulation must consist of adhesive tape, gummed paper, Sellotape, varnish, or plastic material (see m.43).

Part 3: Épée Specific Requirements

This section sets out the weapon-specific material, dimensional, and functional requirements applicable to the épée.

m.13 Épée General Characteristics

1. Nature of the Weapon

The épée is a thrusting weapon designed to register a valid touch by means of a spring-loaded tip connected to an electrical scoring apparatus.

m.14 Épée Dimensions and Weight

1. Maximum Total Length

The total length of the épée, measured between plane A and plane E, must not exceed 110 cm (see Figure 7, m.4, and m.57).

2. Maximum Blade Length

The blade length, measured between plane A and plane B of a straight blade, must not exceed 90 cm (see Figure 7, m.4, and m.57).

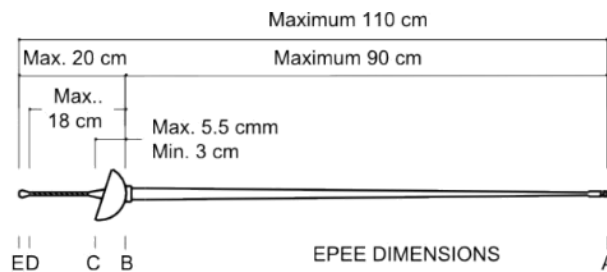


Figure 7: Épée dimensions and planes

3. Maximum Total Length to Guard Rear

The total length between planes A and C must never be greater than 95.5 cm (see Figure 7, m.4, and m.57).

4. Maximum Weight

1. For the purposes of Épée, total weight must mean the assembled weapon including the blade, tang, guard, handle, pommel or locking nut, socket assembly, tip assembly, and internal wiring.
2. The body cord must not be included in the weight measurement.
3. The total weight of the épée ready for use must be less than 770 g (see m.55-m.57).
4. Weight must be determined in accordance with official Weapons Control procedures.

m.15 Épée Blade

1. Cross Section

The blade must be triangular in section without cutting edges.

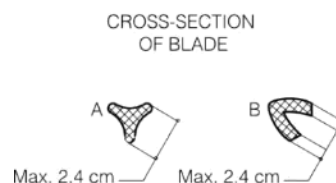


Figure 8: Cross-section of épée blade

2. Material

The blade must be manufactured to the material requirements set out in this Book and the Materials Homologation Handbook.

3. Orientation

1. The blade must be mounted with the widest face horizontal
2. The groove must be positioned uppermost.

4. Maximum Width

The maximum width of any of the three sides of the blade is 24 mm.

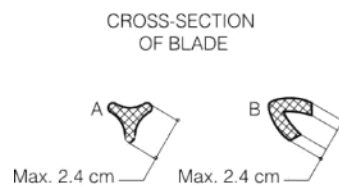


Figure 9: Maximum width of a side of the épée blade

5. Flexibility

1. The blade must demonstrate flexibility corresponding to a bend between 4.5 cm and 7 cm.
2. Flexibility must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The blade is fixed horizontally at a point 70 cm from the extremity of the button.
 - b. A 200 g weight (tolerance +/- 1 g) is suspended 3 cm from Plane A.
 - c. The bend of the blade is measured from Plane A between the non-weighted and weighted positions (see Figure 10).

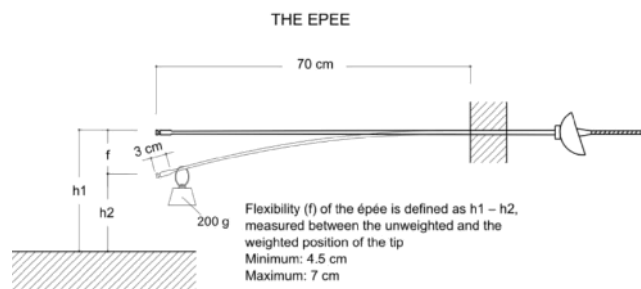


Figure 10: Épée blade flexibility verification

6. Curvature

1. The blade must not exhibit a curvature exceeding 1 cm.
2. The curvature must only be in the vertical plane.
3. The curvature must be near the center of the blade.
4. Curvature must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The blade is placed on a flat surface.
 - b. The position of the curve is uppermost.
 - c. The measurement is maximum distance between the flat surface and the blade.

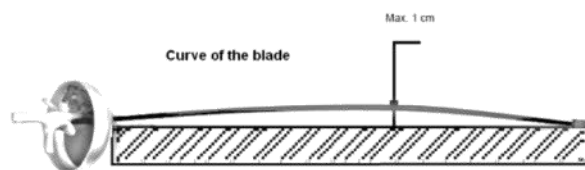


Figure 11: Épée blade curvature

m.16 Épée Guard

1. Guard Depth

The depth of the guard (the distance between planes B and C) must be between 3 cm and 5.5 cm (see Figure 7).

2. Eccentric Mounting Option

The distance between the center of the guard and the point where the blade passes through the guard must not exceed 3.5 cm.

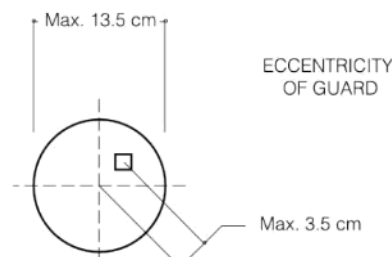


Figure 12: Épée guard eccentricity limits

3. Padding

1. The interior must contain padding of cushioning material.
2. Padding must not exceed 2 cm in thickness.

4. Gauge Compliance

The guard must be verified in accordance with official Weapons Control procedures in the following way:

1. The guard must be able to pass through a cylindrical gauge having a diameter of 13.5 cm and a length of 15 cm.
2. The blade must be parallel to the axis of the cylinder.

m.17 Épée Socket Assembly

1. The socket assembly must be 3 separate sockets held in position by a block.
2. The socket must have two separate holes in the block

m.18 Épée Handle

1. Orthopedic handles, whether metal or not, may not be covered with leather or any material which could hide wires or switches.

m.19 Épée Electrical System

1. Electrical Wire

1. The wires must permanently connect the pointe d'arrêt to the socket.
2. The épée must have two separate, individually insulated electrical wires
3. Wires must be securely affixed by glue within the groove of the blade along the entire length of the blade

2. Wire-Socket Assembly

1. Each wire connects to one socket.
2. The earth circuit of the épée must be connected to the third socket.
3. Wires must have insulated sheaths that pass from the guard to the socket assembly.
4. In no case may uninsulated wires extend beyond the plug connections.
5. Each wire must be passed through the hole in the block separately and then connected to the socket terminals.

3. Electrical Resistance

1. The total electrical resistance of the épée must not exceed 2 ohms.
2. Resistance must be verified in accordance with the Weapons Control procedures using an Ohm meter.

4. Circuit Function

1. When the tip assembly is not depressed, the active circuit must be open.

2. When the tip assembly is depressed in accordance with this Book, the active circuit must be completed.

m.20 Épée Tip Assembly

1. General Construction

1. It must be easy to apply the pointe d'arrêt of the opponent's weapon to the earth circuit.

2. Tip Assembly Components

A tip assembly must consist of

1. An insulated pointe d'arrêt.
2. A shank that is smaller in diameter to the pointe d'arrêt.
3. Spring(s)
4. A barrel that is a separate hollow cylindrical body.

3. Tip Assembly Material

1. The components of the tip assembly must be manufactured from materials that:
 - a. Provide sufficient mechanical durability under normal competitive use;
 - b. Maintain consistent electrical performance as required by this Book; and
 - c. Resist corrosion or degradation that could affect safety or electrical function.
2. Material specifications and approved alloys must be defined in the Materials Homologation Handbook.

4. Pointe d'arrêt Dimensions and Shape

1. The pointe d'arrêt must be cylindrical.
2. The front surface of the pointe d'arrêt is flat and perpendicular to its axis.
3. The diameter of the crown of the pointe d'arrêt must be 8 mm ± 0.05 m

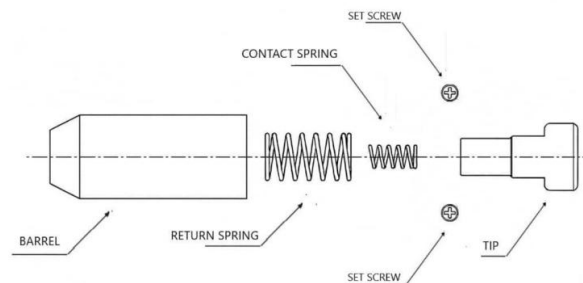


Figure 13: Notional drawing of épée tip assembly

5. Pointe d'arrêt --- Edge Treatment

The edge of the pointe d'arrêt must be either:

1. Rounded with a radius of 0.5 mm; or
2. Chamfered at 45° with a width of 0.5 mm.

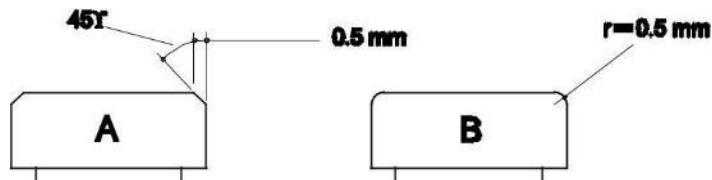


Figure 14: Examples of épée pointe d'arrêt edge treatment

6. Pointe d'arrêt --- Mounting

1. The pointe d'arrêt must be retained within the button in at least two places equidistant from each other.
2. Other methods of mounting must be approved by the SEMI Commission.

7. Shank Construction

1. The shank guides the pointe d'arrêt
2. The shank and the insulating washer must be sufficiently recessed in relation to the crown.
3. The shank must be recessed in diameter between 0.3–0.5 mm in relation to the crown.
4. The shank must not allow a hit to be registered by sliding the depressed pointe d'arrêt against the convex surface of the guard.

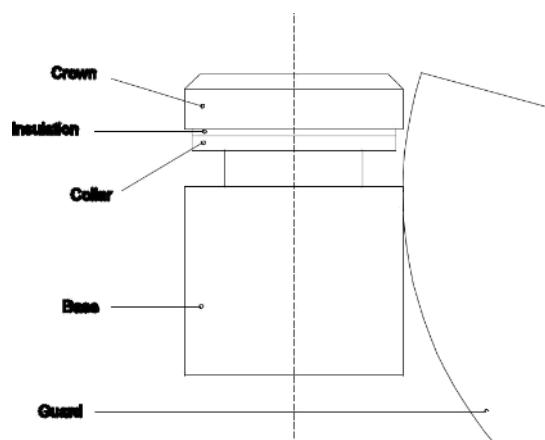


Figure 15: Example of convex guard and épée tip hit

8. Barrel Base Dimensions

The diameter of the base (barrel) must not be less than 7.7 mm.

9. Spring – Construction

1. Springs must be manufactured from materials capable of maintaining their elastic properties under repeated compression during normal competitive use.
2. The spring must be capable of lifting a weight of 750 g $\pm$ 2 g.

10. Tip Assembly - Travel

1. The travel of the pointe d'arrêt before a hit is registered must be greater than 1 mm.
2. The further course which the pointe d'arrêt may travel must be less than 0.5 mm.
3. The total course or travel of the point must be greater than 1.5 mm.
4. Travel must be verified in accordance with official Weapons Control procedures and the checking apparatus requirements in m.61 in the following way:
 - a. The gauge must have a tolerance of a maximum of $\pm$ 0.05 mm.

11. Tip Assembly - Pressure

1. The pressure required on the pointe d'arrêt must be more than 750 to complete the circuit.
2. Pressure must be verified in accordance with official Weapons Control procedures in the following way:
 - a. A weight of 750 g $\pm$ 3 grams must be lifted by the spring of the point d'arrêt.

12. Tip Assembly --- Adjustment Prohibition

1. Adjusting the tip assembly by means of screws or any other external fixing device, once the point has been assembled on the weapon, is forbidden.
2. External screws or similar fixings are permitted only when they are essential for the tip assembly.
3. The head of the screw or fixing device must never project beyond the flat top surface of the point
4. The head of the screw or fixing device must not exceed 2 mm in diameter beyond the external flat surface of the barrel.

13. Tip Assembly --- Circuit Function

1. The pointe d'arrêt must maintain an open circuit when not depressed.
2. The circuit must be completed when the pointe d'arrêt is depressed in accordance with this Book.

m.21 Épée Blade-Tip Assembly Interface

1. General Requirement

1. The tip assembly must be securely fixed to the blade.
2. Only fixing methods expressly permitted by this Book must be allowed.
3. The interface region is where the button is fixed to the blade.

2. Interface Region Conditions of Tip Assembly and Blade

The tip assembly must be securely fixed to the blade by means of either:

- a. The tip assembly is made in one piece with the blade; OR
- b. The blade is securely retained by the tip assembly; OR
- c. The tip assembly must be securely fixed to the blade by means of a threaded interface in accordance with the épée weapon.

3. Fixing Method

1. Normally, only fixing by metal to metal is allowed.
2. However, fixing by any material of great mechanical strength may be authorized after approval by the SEMI Commission of the FIE.

4. Minimum Blade Diameter

1. Prior to threading, the blade must not have a diameter of less than 4 mm at any point within the interface region.
2. It is forbidden to have anything wrapped around the blade at the interface region.

5. Threaded Core Diameter

The diameter of the core of thread at the end of the blade must not be less than 3.05 mm (Threading SI 4.0 x 0.70).

6. Threaded Blade Tip Length

1. The part of the blade on which the tip assembly is fixed must be of a length of 7–8 mm.
2. The tip assembly must fully cover the threaded length of the blade tip.

7. Internally Threaded Barrel Length

1. It is recommended that only the half of the internal barrel length, at the extremity of the blade, be threaded.
2. For the other half the internal barrel will have a smooth surface of 4 mm diameter into which it should take some force for the corresponding part of the blade to be introduced.

8. Groove Treatment

The groove at the blade tip must cut in such a way that it weakens as little as possible the section of the blade.

9. Prohibited Methods

All methods of soldering or brazing or in general any heating which may affect the temper of the blade and the blade tip are forbidden.

Part 4: Sabre Specific Requirements

This section sets out the weapon-specific material, dimensional, and functional requirements applicable to the sabre.

m.22 Sabre General Characteristics

1. Nature of the Weapon

The sabre is a cutting and thrusting weapon designed to register a valid touch by means of contact with the edge, flat, or point of the blade upon the valid target connected to an electrical scoring apparatus.

m.23 Sabre Dimensions and Weight

1. Maximum Total Length

The total length of the sabre, measured between Plane A and Plane E of a straight blade, must not exceed 105 cm (see Figure 16, m.4 and m.57).

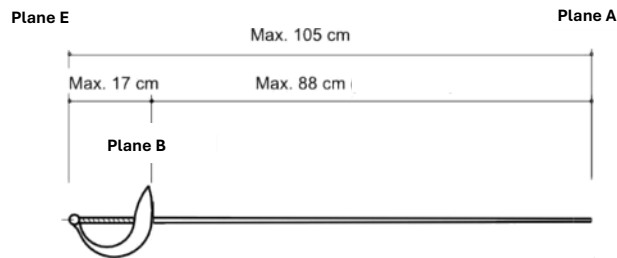


Figure 16: Dimensions of the sabre

2. Maximum Blade Length

The blade length, measured between Plane A and Plane B, must not exceed 88 cm (see Figure 16, m.4 and m.57).

3. Maximum Handle Length

The maximum length of the handle is 17 cm, measured between Plane B and Plane E (see Figure 16, m.4 and m.57).

4. Maximum Weight

1. For the purposes of sabre, total weight must mean the assembled weapon including the blade, tang, guard, handle, pommel or locking nut, socket, and insulation.
2. The body cord must not be included in the weight measurement.
3. The total weight of the sabre must be less than 500 g (see m.55-m.57).
4. Weight must be determined in accordance with official Weapons Control procedures.

m.24 Sabre Blade

1. Cross Section

The blade must be approximately rectangular in cross-section.

2. Material

The blade must be manufactured to the material requirements set out in this Book and the Materials Homologation Handbook.

3. Surface Condition

The blade must not be sharpened, ground, heated, or otherwise treated in a manner that creates a hazardous surface between the guard and the tip.

4. Blade Width

The minimum width of the blade, measured at the tip, must be 4 mm (see Figure 17).

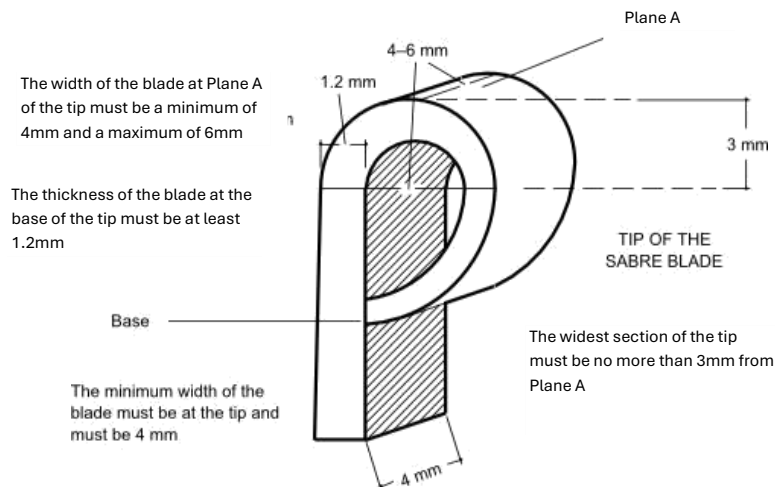


Figure 17: Blade width dimensions

5. Blade Profile, Thickness and Tip Geometry

1. The end of the blade must be folded over onto itself or fashioned in one piece to form the sabre tip.
2. The tip, when viewed end-on, must have a square or rectangular section.
3. The tip section must be a minimum of 4 mm to a maximum of 6mm.
4. The maximum dimension must be located not more than 3 mm from the end of the blade (Plane A).
5. The minimum thickness of the blade, measured immediately below the tip, must be at least 1.2 mm.

6. Flexibility

1. The blade must demonstrate flexibility corresponding to a bend of minimum 4 cm and maximum 7 cm.
2. Flexibility must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The blade is fixed horizontally at a point 70 cm from the tip of the blade.
 - b. A 200 g weight (tolerance ± 1 g) is suspended 1 cm from the tip.
 - c. The bend is measured at the tip of the blade between the weighted and unweighted positions (see Figure 18).

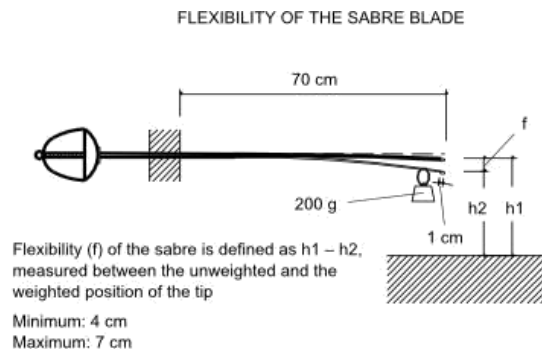


Figure 18: Flexibility of the sabre blade

7. Curvature

1. The blade must not exhibit a curvature exceeding 4cm.
2. The curvature of the blade must be continuous.
3. The curve must be in the vertical plane only.
4. The curve must be near the center of the blade.
5. Blades with sharply bent extremities are forbidden.
6. Blades which curve in the direction of the cutting edge are forbidden.
7. Curvature must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The blade is placed on a flat surface.
 - b. The position of the curve is uppermost.
 - c. The measurement is maximum distance between the flat surface and the blade (see Figure 19).

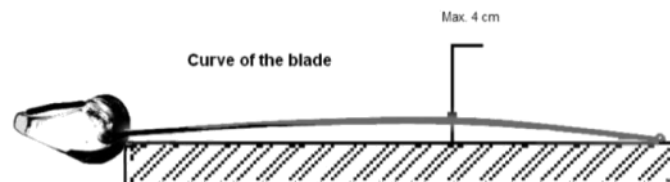


Figure 19: Sabre blade curvature

m.25 Sabre Guard and Guard Assembly

1. Guard Assembly

A guard assembly must consist of

- a. The guard
- b. A socket assembly
- c. A handle
- d. A pommel

2. Guard Geometry and Construction

1. The guard must be full in shape.
2. The guard must be made in one piece.
3. The guard must have a continuous convex form.
4. The guard must not have a rim.
5. The guard must not have holes.

3. External Guard Surface Requirements

The guard must be externally smooth.

4. Guard Mounting

1. The guard must be mounted and fixed between the blade and the handle
2. The convex face of the guard is toward Plane A (the tip).

5. Gauge Compliance

The guard must be verified in accordance with official Weapons Control procedures in the following way:

1. The sabre guard must pass through a rectangular gauge of 15 cm width by 14 cm length by a depth of 15cm
2. The blade must be parallel to the axis of the gauge.

6. Guard Interior Insulation

1. The interior of the guard must be completely insulated.
2. Insulation must be by means of insulating paint or a pad.
3. The insulating material must prevent electrical contact between the guard body and internal components other than the designated socket connections.

7. Guard Exterior Insulation

1. The exterior of the guard must be insulated for a distance of 7–8 cm measured from Plane E (pommel).
2. This insulation must cover the portion of the guard nearest to the handle.

8. Socket Assembly

The socket assembly must be positioned between the guard and the handle (see m.39 for body wire requirements and m.45).

9. Handle

The handle must be completely insulated.

10. Pommel

The pommel must be completely insulated.

m.26 Sabre Electrical System

1. Circuit Function

The socket assembly inclusive of the body wire plugs make a closed electrical circuit through the wires to the scoring apparatus.

2. Socket Assembly — Fixation

1. Inside the guard there must be a socket assembly.
2. The socket assembly must contain two sockets.
3. The two sockets and the body wire plug must be in direct contact with the body of the guard during fencing activity.
4. The socket must not include any part which allows unintended electrical contact to be made between the plug sockets.

3. Electrical Resistance

1. The maximum electrical resistance allowed must not exceed 1 ohm (see m.45).
2. Resistance must be verified in accordance with the Weapons Control procedures using an Ohm meter.

Chapter 3: Equipment and Clothing

Part 1: General Provisions

Refers to parts, requirements, and definitions related to all equipment and clothing.

m.27 Equipment and Clothing General Requirements

1. Protection Standards

1. Equipment and clothing must provide the competitor with maximum protection compatible with the freedom of movement necessary for fencing.
2. All protective equipment must meet FIE safety standards and, where required, homologation requirements (see Chapter 6, m.66-m.69).
3. The numerical resistance values and corresponding test methods are those defined in this Book and the Materials Homologation Handbook; compliance with those standards is mandatory for all equipment used in FIE competitions.

2. Safety Requirements

1. Fencers' clothing must be clean and in good condition.
2. Clothing and equipment must be maintained in a condition that does not compromise their protective function, structural integrity, or safety performance
3. All clothing and equipment covered by this Chapter must be worn and fastened in accordance with their approved design and any applicable FIE safety standard, so that full protective coverage is maintained during fencing.
4. All closures, including zips, buttons, hooks, straps, elastic, and hook-and-loop (Velcro) fasteners, must be fully closed or secured on the field of play and throughout each bout; a fencer must not begin or continue a bout if any required fastening is open, partially open, or otherwise not correctly secured.
5. Equipment must not include buckles or openings in which the opponent's point may be caught up — except accidentally — and thus held or deflected.
6. Equipment must not obstruct or injure the opponent beyond what results from normal, valid fencing actions (see m.2).

3. Material Requirements and Color Requirements

1. Jackets, under-plastrons, breeches, and trousers must be made entirely of cloth able to resist a pressure of 800 Newtons.
2. The material from which equipment is made must not have a surface smooth enough to cause the pointe d'arrêt, the tip, or the opponent's hit to glance off.
3. Seams in high-stress or vital areas, including under the arms and at the armpits, must maintain the same minimum perforation resistance as the surrounding material and must not create structural weaknesses or openings (m.69).

4. The fastenings of the uniform, jacket, and breeches (typically zips) must be protected by a flap sewn to cover the fastenings in the direction of the fencer's armed arm:
 - a. Right-handed fencers: from right to left
 - b. Left-handed fencers: from left to right
5. Fencers' clothing may be of different colors, apart from black.

4. Homologation and Quality Labels

1. All protective equipment must conform to the safety standards described in the relevant FIE safety documents and Materials Homologation Handbook.
2. Equipment requiring homologation must display a valid homologation mark recognized under the applicable FIE safety standards and must be used only while that homologation remains valid.
3. Only equipment bearing valid homologation marks may be used in FIE competitions.
4. Use and validity of homologation marks are further governed by m.67-m.73

5. National Identification and Uniform Standards

1. For the purposes of these Rules, the national uniform consists of the jacket, breeches, and socks worn in official FIE competitions.
2. There must be only one national uniform design per country, with the exception that manufacturers' marks and sponsors' logos may be different.
3. National identification is fulfilled by the compulsory, FIE-accepted national leg logo displayed on both legs; these markings must appear on the breeches and, where applicable, on any visible sock turnover.
4. Each federation may designate only one national leg-logo design for use in official FIE competitions; that design must be identical for all fencers of the same federation in the same competition, subject only to differences in manufacturers' marks and sponsors' logos.
5. Compliance with the national uniform standards may be checked at Weapons Control (see m.55-m.56)

6. National Logos

1. Logos worn on national clothing must be approved by the FIE Executive Committee or the federation concerned.
2. Approved national logo designs are published through official FIE channels and may thereafter be used in official FIE competitions (see m.69).
3. For all official FIE competitions:
 - a. The wearing of national logos is compulsory on both legs.
 - b. National logos are optional on the arm(s).

7. Name and Federation Display

1. The family name of the fencer must be displayed on the back of the jacket, with the abbreviation of the national federation below it, at the level of the shoulder blades.
2. Names and abbreviations must be printed directly onto the jacket or onto cloth entirely sewn onto the jacket.
3. Letters must conform to the following specifications:
 - a. Color: Dark Blue
Suggested Dark Blues

Hex	RGB	CMYK (C, M, Y, K) approx.
#000040	0, 0, 64	100, 100, 0, 75
#000068	0, 0, 104	100, 100, 0, 59
#000080	0, 0, 128	100, 100, 0, 50
#00008B	0, 0, 139	100, 100, 0, 45
#002366	0, 35, 102	100, 66, 0, 60
#003366	0, 51, 102	100, 50, 0, 60

- b. Style: Lettering must be set in an all-capitals sans-serif typeface of normal width (not condensed), such as Arial, Aptos, Calibri, Segoe UI, Verdana, Open Sans, or an equivalent font.
 - c. Height: between 8 cm and 10 cm
 - d. Stroke width: between 6mm to a maximum 1.5 cm
4. Letter dimensions may be checked at Weapons control (see m.55-m.57)

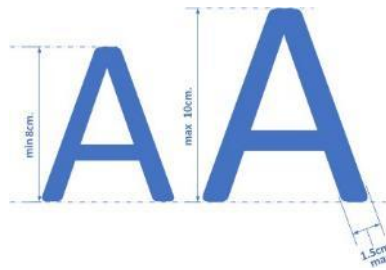


Figure 20: Illustration of name lettering specifications

5. The World Champion has the right to have their name and the abbreviation of their national federation printed in red for the following season.
6. An Olympic Champion has the right to have their name and the abbreviation of their national federation printed in gold until the end of the next Olympic Games.

8. Effect of Marking on Function

Any markings, colors, names, numbers, logos, or decorations, including paints, inks, transfers, or patches, applied to weapons, clothing, masks, or conductive pistes must not impair their safety performance or functional characteristics, including electrical conductivity and resistance limits specified in this Book.

Part 2: Mask

m.28 Mask Requirements

1. General Construction

1. Masks must be constructed in accordance with the safety standards described in this Book and the Materials Homologation Handbook.
2. Masks must carry the quality label specified in those standards.
3. The mask must be made in one piece with proper structural integrity.

2. Mesh Specifications

1. The mask must be made with meshes (space between the wires) of maximum 2.1 mm.
2. The wires must have a minimum gauge of 1 mm diameter.
3. The entire mesh of the mask must be able to withstand, without permanent deformation, the introduction of a conical instrument having:
 - a. An angle of the surface of the cone at 4° to the axis.
 - b. A pressure of 12 kg.

3. Bib Requirements

1. The bib of the mask must be made with cloth resistant to 1600 Newtons.
2. The bib must provide complete protection of the throat and neck area.
3. The bib must be securely attached to the mesh portion of the mask.

4. Safety Retention Systems

1. The mask must include two different safety retention systems at the rear.
2. The two ends of the straps of the systems must be firmly affixed to the two sides of the mask.
3. Any retrofitting to existing masks must be carried out by the original manufacturer.

4. The safety retention systems must meet the requirements approved by the SEMI Commission.

5. Mask with Metallic Tongue

1. The central band (strap) must not be less than 45 mm wide.
2. The strap must be positioned low enough across the rear of the cervical region to ensure that the mask cannot slide off the head during fencing actions.
3. The band must be of solid material: when stretched, the material must not sustain permanent plastic deformation and must quickly return to its original shape and size.
4. The fastening system of the band must comply with all of the following:
 - a. It must use a double security system, meaning that the Velcro™ must be attached at least twice.
 - b. The Velcro™ must have a minimum breaking strain of 750 N/cm.
 - c. The strap must be secured to each side of the mask by tags to which it is attached by Velcro™, and those tags must have at least the same minimum breaking strain.



Figure 21: Mask with metallic tongue

6. Mask without Metallic Tongue

1. The strap must incorporate 3 fixing points.
2. The main strap must be positioned low enough to ensure that the mask cannot slide off the head during fencing actions.
3. Where a magnetic strap system is part of the approved design, the use of the magnetic strap remains mandatory.

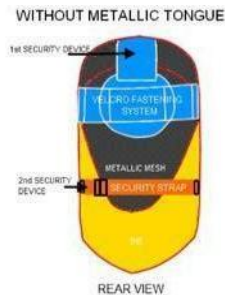


Figure 22: Mask without metallic tongue

7. Dimensions and Fit

1. The mask must provide complete coverage of the head, face, and neck during all fencing positions.
2. The mask must fit securely without excessive movement during fencing actions.
3. The dimensions must conform to the standards specified in this Book and to the Materials Homologation Handbook.

8. External Color and Color Designs

Masks may feature colored designs on condition that they are approved by the FIE Executive Committee.

9. Additional Requirements --- Foil

1. The mesh of the mask must not extend below the chin.
2. The mask must be insulated internally and externally by a plastic material resistant to impact.
3. The part of the bib that is beneath a horizontal line 1.5–2 cm below the chin must be entirely covered with a material that has the same conductive characteristics as the conductive jacket.
4. The electrical contact between the mask and the conductive jacket must be maintained throughout all fencing actions.
5. The wire must be attached to the bib of the mask with one crocodile clip and to the jacket with the other crocodile clip.
6. See m.37 for specific foil wire details.

10. Additional Requirements --- Sabre

1. The entire mesh, bib of the mask, joined areas, and edges must be conductive.
2. The conductive surface must cover all valid target areas of the head as defined in the competition rules.
3. The mask must maintain electrical continuity with the conductive jacket.
4. The electrical contact between the mask and the conductive jacket must be maintained throughout all fencing actions.
5. The wire must be attached to the bib of the mask with one crocodile clip and to the jacket with the other crocodile clip.
6. See m.38 for specific sabre wire details.

11. Additional Requirements – Epee

1. The entire mask must not be conductive.

Part 3: Jacket

m.29 Jacket Requirements

1. Jacket General Requirements

1. The lower edge of the jacket must overlap the breeches by at least 10 cm when the fencer is in the on-guard position.
2. The jacket must include a lining making a double thickness of material for:
 - a. The sleeve down to the elbow of the sword arm
 - b. The flank up to the region of the armpit
3. The jacket must be constructed to allow full freedom of movement while maintaining protective coverage.

2. Material Specifications

1. The jacket must be made entirely of cloth able to resist a pressure of 800 Newtons.
2. The material must comply with the safety standards and test methods described in this Book and the Materials Homologation Rules.

3. Fastening Requirements

1. The jacket must be capable of being completely closed.
2. The collar must be capable of being completely fastened.

4. Seam Construction

1. Seams must be constructed to maintain the 800 Newton resistance standard.

5. Additional Requirements Épée

1. At épée, the fencer is required to wear a regulation jacket which covers the whole of the surface of the trunk.
2. The jacket must provide complete coverage of the valid target area as defined in the competition rules.
3. No conductive surface is required for épée jackets.

m.30 Conductive Jacket Requirements

1. General Coverage:

1. The conductive surface of the conductive over-jacket, which is worn over the protective jacket, must cover the valid target of the fencer entirely and without omission when in the on-guard position.
2. Whatever the means of fastening used, the conductive material must cover a sufficient area to ensure that it covers the valid target in all positions of the fencer.
3. The overlap must always be on the sword-arm side.

4. The interior of conductive jackets must be electrically insulated by a lining or by an adequate treatment of the conductive lamé material.

2. Conductive Jacket - Material Requirements:

1. The lamé material used must be of conductive thread in both warp and weft.
2. Holes or patches of oxidation or other defects which may prevent the registration of a valid hit is forbidden.

3. Conductive Jacket – Construction Requirements:

1. The jacket when laid flat is a straight line between the point of junction of the lines of the groin and the two points corresponding to the tops of the hip bones (ilium).
2. The band of non-conductive material passing between the legs and is fixed to the lower edge of the back of the jacket must be at least 3 cm wide.
3. The conductive collar must have a minimum height of 3 cm.

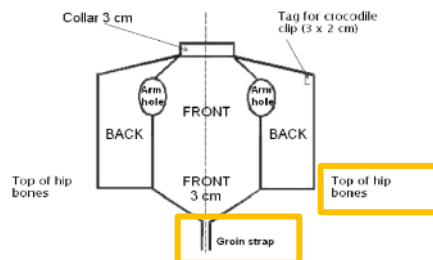


Figure 23: Conduct jacket illustration

4. Conductive Jacket – Electrical Resistance:

1. The electrical resistance measured between any two points of the conductive material must not be greater than 5 ohms +1 ohm.
2. Electrical resistance must be verified in accordance with official Weapons Control procedures in the following way:
 - a. The resistance will be measured by using a 500 g conductive metal which has a hemispherical end with a radius of 4 mm.
 - b. This weight, placed on this end and moved about on the lamé, must maintain continuous contact with a maximum resistance of 5 ohms +1 ohm.

5. Additional Requirements Foil

1. The foil conductive jacket must have a conductive flap, minimum 2 cm by 3 cm, near the middle of the back, just below the collar, to which the crocodile clip from the mask can be attached.

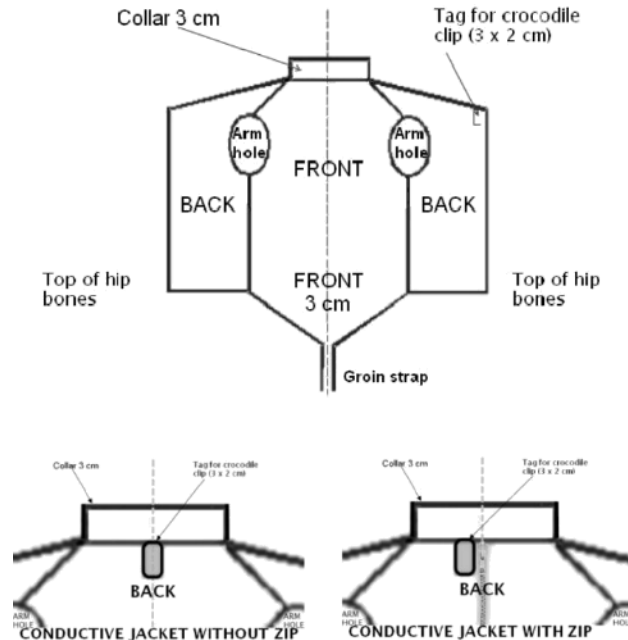


Figure 24: Foil conductive jacket details

2. Including as mentioned in t.77

6. Additional Requirements Sabre

1. The conductive jacket or conductive sleeveless over-jacket must cover the valid target entirely.
2. The valid target includes the area above a horizontal line across the top of the folds formed by the fencer's thighs and trunk when in the on-guard position.
3. Sleeves must reach to the middle of the hand when the sword arm is extended and the hand is in the position of the sixte parry.
4. The conductive material must cover the entire arm
5. Whatever the means of fastening used, the conductive material must overlap sufficiently to cover the target in all fencing positions.

6. The overlap must be on the sword-arm side and must not extend below the horizontal line defining the valid target.

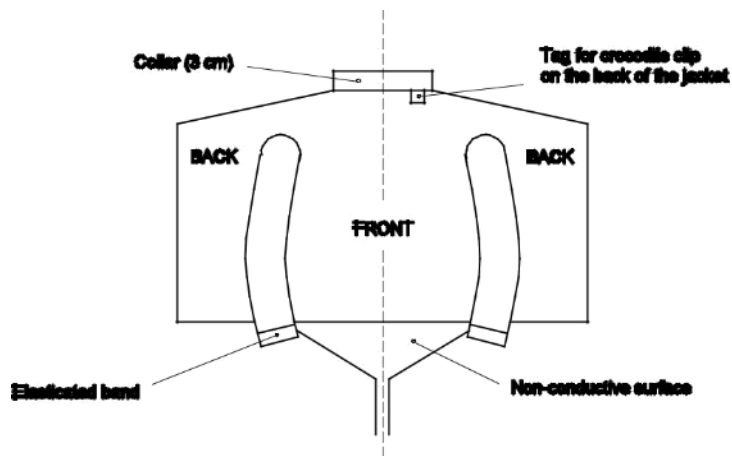


Figure 25: Sabre conductive jacket

Part 4: Breeches

m.31 Breeches Requirements

1. Material Specifications

1. The breeches must be made entirely of cloth able to resist a pressure of 800 Newtons.
2. The material must comply with the safety standards and test methods described in this Book and the Materials Homologation Rules.

2. Length and Fastening

1. The breeches must be fastened below the knees.
2. The fastening system must be secure and must not come undone during competition.
3. The breeches must overlap with socks to ensure complete leg coverage.

Part 5: Glove

m.32 Glove Requirements

1. General Coverage Requirements

1. At all weapons, the gauntlet (cuff) of the glove must, in all circumstances, fully cover approximately half the forearm of the competitor's sword arm.

2. The glove must prevent the opponent's blade from entering the sleeve of the jacket.
3. The gauntlet (cuff) must maintain this coverage and protective function throughout all fencing actions.

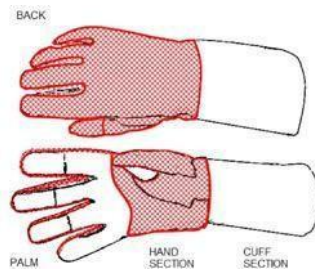


Figure 26: Sections of the glove

2. Construction Standards

1. Any hole in the hand of the glove is forbidden.
2. The closure of the glove must be from the middle of the wrist upwards towards the thumb.
3. The glove must be constructed so that seams, closures, and materials do not tear, split, or fail under normal fencing conditions.

3. Material Requirements

1. The glove must provide protection consistent with the clothing resistance standards specified in this Book and the Materials Homologation Handbook for the relevant weapon and area.
2. Under normal fencing conditions, the glove material and seams must not allow penetration or tearing that compromises protection of the hand or forearm

4. Additional Requirements --- Foil

1. The glove may be slightly padded.
2. Padding, if present, must not alter the fit or compromise the security of the glove.

5. Additional Requirements --- Sabre

1. Where the glove forms part of the valid target, it must provide electrical continuity so that hits on the hand register correctly in accordance with the scoring rules for sabre.
2. The material of the fencing glove must have a level of protection of 800 N on the areas shown in the applicable diagram (see Figure 27) ; the seams must have a minimum strength of 200 N, and the cuff must have a level of protection of 350 N.
3. The conductive material, which can be removable or fixed, must cover all of the gauntlet (cuff) of the glove down to below the external cubital styloid (small prominent bone of the wrist), both when the fencer is in the on-guard position and when the sword arm is straight.

4. The conductive material must be turned over into the inside of the gauntlet (cuff) to a depth of at least 5 cm.
5. An elastic band, popper button, or any system which guarantees conductivity and which has been approved by the SEMI Committee must be used.
6. When a conductive overlay is worn, the overlay must contain a device which fixes its position on the arm so that its position cannot be changed during the bout.
7. The conductive material must satisfy the specified control conditions (see m.30.2).

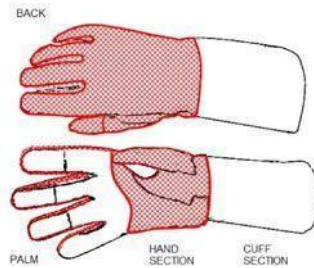


Figure 27: Shaded areas requiring 800N for sabre gloves

Part 6: Under-Plastron

m.33 Under-Plastron Requirements

1. Mandatory Use

1. An undergarment consisting of a protective under plastron is obligatory for all fencers at all weapons.
2. The under plastron must be worn beneath the jacket.

2. Coverage Design

1. The under-plastron must cover the vital upper areas of the body.
2. The coverage must follow the design given in this Book and Materials Homologation Handbook.
3. The under-plastron must provide protection for:
 - a. The torso.
 - b. The sword-arm shoulder and upper arm.
 - c. The armpit region of the sword arm

3. Material Specifications

1. The under-plastron must be made of material resistant to 800 Newtons.
2. The material must provide protection consistent with the clothing resistance standards specified in this Book and the Materials Homologation Handbook.
3. The under-plastron must maintain its specified protective properties throughout its service life under normal fencing conditions.

4. Construction Requirements

1. The under-plastron must be constructed without openings or gaps that could compromise protection.
2. Seams must be constructed to maintain the 800 Newton resistance standard.
3. The under-plastron must fit securely without shifting during fencing actions.

Part 7: Chest Protector

m.34 Chest Protector Requirements

1. Mandatory and Optional Use

1. At all weapons, the use of a chest protector is:
 - a. Compulsory for women.
 - b. Optional for men.
2. The chest protector must be worn in accordance with weapon-specific requirements set out in this Book and in the Materials Homologation Handbook.

2. General Construction Standards

1. The chest protector must be made of material capable of distributing impact force.
2. The chest protector must fit securely and must not shift during fencing actions.
3. The chest protector must not impede freedom of movement necessary for fencing.

3. Material and Design Requirements

1. The rigid material must withstand the impact of normal weapon strikes without cracking or deforming in a way that reduces protection.
2. The design must provide the required protection without creating bulk that interferes with proper fencing movements or the fit of other protective clothing.
3. The chest protector must be worn in the correct position to protect the vital upper areas of the body.

4. Additional Requirements --- Foil

1. At foil, the chest protector must be worn below the protective plastron / under-plastron.
2. A surface treatment for foil chest protectors is required to prevent the chest protector from causing non-valid hits to register on the scoring apparatus.
3. The surface treatment for foil chest protectors:
 - a. Must consist of a soft material such as ethylene-vinyl acetate (E.V.A.) covering the entire surface of the chest protector on the side facing the opponent.

- b. The E.V.A. material must have a thickness of 4 mm and a density of 22 kg/m³.
- c. The material must be either attached to the chest protector or incorporated into it as a single unit.
- d. The material must have the SEMI technical mark at the center of the upper edge.

Part 8: Socks

m.35 Sock Requirements

1. Length and Coverage Requirements

- 1. With breeches, the fencer must wear socks which cover the legs right up to the breeches.
- 2. There must be no gap between the top of the socks and the bottom of the breeches.
- 3. The socks must provide complete coverage of the lower leg.

2. Fastening Requirements

- 1. Socks must be held up in such a way that they cannot fall during competition.
- 2. The fastening system (elastic, garters, or other means) must be secure and reliable.
- 3. Socks must maintain their position during all fencing actions.

3. Uniform Standards

- 1. Both socks worn by the fencer must match the same design and color.
- 2. Socks must conform to the national uniform standards set out in Article m.26.5 and in this Book.

4. Turn-Over Allowances

- 1. The fencer is permitted to wear socks with a 10 cm turn-over showing the colors of their national team.
- 2. If a turn-over is worn, it must be consistent on both legs (see m.27.5-m.27.6).

Part 9: Body Wire and Electrical Connections

m.36 Body Wire Requirements – General

1. General Construction

- 1. The conductive wires of the body wire must be insulated electrically from each other.
- 2. Wires must be twisted or joined together and must not be affected by humidity.

3. Any external sheath or covering of the body wire must be made of white-colored or clear material.
4. The body wire must be constructed to withstand repeated flexing and use.
5. The body wire must maintain electrical integrity throughout its length during all fencing actions.

2. Electrical Resistance Standards

1. The electrical resistance of each conductive wire (plug to plug) must not exceed 1 ohm.
2. Body wires that exceed the resistance limit must not be used in competition.
3. Resistance must be measured in accordance with official Weapons Control procedures in this Book and the Materials Homologation Handbook.

3. Plug and Socket Requirements

1. The body wire must have a connecting plug at each end (see weapon-side socket requirements in m.8, m.17 and m.25, and Chapter 4).
2. Plugs must be made of transparent material to allow visual inspection.
3. If no securing device is fitted on the weapon-side socket assembly, a securing device must be fitted on the corresponding plug of the body wire.
4. The securing device must prevent the body wire from becoming accidentally unplugged during the bout while still allowing deliberate disconnection when not fencing.

4. Testing and Compliance

1. The body wire must be tested in accordance with official Weapons Control procedures in this Book and the Materials Homologation Handbook.
2. Any body wire that does not meet the resistance requirements must not be used in competition.

m.37 Foil Body Wire

1. Body Wire Configuration

1. The foil body wire must have three conductors.
2. At the spool end, the three-pin male plug will be attached to the wires in the following manner:
 - a. The pin at 15 mm from the center pin: to the conductive jacket.
 - b. The central pin: to the wire in the weapon.
 - c. The pin at 20 mm from the center pin: to earth.
3. At the weapon end, the two-pin plug is attached:
 - a. One pin: to the weapon wire.
 - b. One pin: to earth (guard/blade).

2. Earth Wire to Conductive Jacket Connection

1. The earth wire with a crocodile clip must connect the body wire to the conductive jacket.
2. The crocodile clip must be soldered to the wire.
3. The electrical resistance in this connection must not exceed 1 ohm.
4. The crocodile clip design and size must conform to specified conditions in this Book and the Materials Homologation Handbook.

3. Mask-to-Jacket Connection Wire

1. The electrical contact between the conductive jacket and the bib of the mask must be ensured by means of a wire with two crocodile clips:
 - a. One crocodile clip attaches to the conductive flap on the back of the jacket.
 - b. The other crocodile clip attaches to the conductive bib of the mask.
2. This wire must be between 30 cm and 40 cm long.
3. A coiled mask wire is not allowed.
4. The electrical resistance between the two crocodile clips must not exceed 1 ohm.
5. Resistance must be measured in accordance with official Weapons Control procedures in this Book and the Materials Homologation Handbook.

m.38 Épée Body Wire

1. Épée Body Wire Configuration

1. The épée body wire must have three conductors.
2. At the spool end, the three-pin male plug is connected in the standard configuration:
 - a. One pin: to the first weapon wire (connected to tip).
 - b. One pin: to the second weapon wire (connected to tip).
 - c. One pin: to earth (the guard and blade).
3. At the weapon end, the three-pin plug connects to the socket assembly inside the guard:
 - a. Two pins connect to the two wires from the tip assembly
 - b. One pin connects to earth (the guard and blade)

2. No Conductive Clothing Connection --- Épée

1. The épée body wire does not require connection to any conductive clothing.
2. The body wire connects only to the weapon and to the spool.

m.39 Sabre Body Wire

1. Sabre Body Wire Configuration

1. The sabre body wire must have three conductors and is similar in construction to the foil body wire.
2. At the weapon end, the plug connects to the socket assembly inside the guard.
3. When attached to the spool and weapon, the body wire must maintain electrical contact with the guard of the weapon.

2. Guard Socket Requirements

1. Inside the guard there must be a socket into which the body wire is plugged.
2. The socket assembly must ensure reliable electrical contact during all fencing actions.
3. The socket assembly must be secured to prevent disconnection during the bout.

3. Earth Wire to Conductive Jacket Connection

1. The body wire must maintain electrical continuity between the scoring apparatus and the conductive surfaces (weapon and jacket).
2. The two sockets of the body wire plug must be in direct contact with the body of the guard, making a closed electrical circuit through:
 - a. The body wire.
 - b. The spool.
 - c. The cable connecting the spool to the scoring apparatus.

4. Mask-to-Jacket Connection Wire

1. The electrical contact between the conductive jacket and the mask must be ensured by means of a wire with two crocodile clips.
 - a. One crocodile clip attaches to the conductive flap on the back of the jacket.
 - b. The other crocodile clip attaches to the mask.
2. This wire must be between 30 cm and 40 cm long.
3. A coiled mask wire is not allowed.
4. The electrical resistance between the two crocodile clips must not exceed 1 ohm.
5. Resistance must be measured in accordance with official Weapons Control procedures in this Book and the Materials Homologation Handbook.

Chapter 4: Scoring Apparatus and Infrastructure

Part 1: Scope, Definitions, and Reference Documents

m.40 General Provisions - Scoring Apparatus and Infrastructure (All weapons)

1. Scope

1. This Chapter covers the requirements for:
 - a. Central scoring apparatus (m.42–m.45).
 - b. Connection systems, including spools, cables, and suspended systems (m.48–m.49).
 - c. Conductive pistes (m.50).
 - d. Source of electrical current (m.51).
 - e. Extension lamps and display systems (m.52–m.53).
2. These provisions apply to all official FIE competitions and are recommended for all fencing venues using electrical scoring equipment.

2. Definitions

For the purposes of this Chapter, the following terms apply:

1. **Central scoring apparatus:** The electrical device that receives signals from the fencers' weapons via connection systems and indicates valid and non-valid hits through visual and audible signals.
2. **Extension lamps:** External light signals placed outside the central apparatus to increase visibility of hit registration for referees, fencers, and spectators.
3. **Display board / Central display apparatus:** Electronic scoreboard displaying fencers' names, scores, time, period, and penalty cards, required for finals and higher-level competition rounds.
4. **Prototype:** A complete sample apparatus (including spools, connections, and all ancillary equipment) submitted for examination and approval by the SEMI Committee prior to use in official FIE competitions.
5. **Homologation:** The formal approval process for equipment and materials as specified in the Materials Homologation Handbook, separate from event-specific apparatus approval.
6. **Connection system:** The complete electrical path from the central apparatus to the fencer, including spools or suspended cables, connecting cables, plugs, sockets, and safety devices.
7. **Conductive piste:** The metallic or conductive surface covering the fencing area, used to neutralize hits made on the floor in foil and sabre.

3. Reference Documents

1. The functional and construction requirements of this Chapter are complemented by the Materials Homologation Handbook, which contains detailed numerical tolerances, test methods, and conformity assessment procedures for scoring apparatus and related equipment.
2. Where this Chapter specifies performance requirements, the Materials Homologation Handbook specifies how conformance is verified

4. Technical Specifications Amendments.

The SEMI Committee can propose variances in the timing specifications for any apparatus in the light of experience, laboratory tests, and consultation with other Commissions.

m.41 Authorization of Apparatus (All weapons)

1. Authorized Apparatus Designs

1. Only electrical apparatus designed with wires connecting fencers to the central apparatus and registering hits by light signals with auxiliary sound signals are authorized.
2. Apparatus without wires using encoded waves authorized by the SEMI are permitted.
3. Apparatus based on wireless waves and those which register sound signals only, are excluded.

2. Scope of Approval

1. Apparatus approval is design-specific; the manufacturer is responsible for ensuring that all apparatus supplied for competition conform to the approved design and meet all technical requirements at the time of use.
2. The SEMI Committee is willing to examine prototypes submitted by constructors even if not intended for an imminent official competition.
3. Approval is given only for one established design which conforms to the drawing submitted, not as a general approval for all products made by any manufacturer.
4. Manufacturers may state in publicity only that the design has been used at a specific official competition, but they must guarantee the apparatus conforms to the approved design.

3. Identification and Liability

1. Every approved apparatus must carry, on its base, a metallic plate identifying its specific characteristics (manufacturer, year of manufacture, model, technical information).

4. Disclaimer of Guarantee

Approval by the SEMI Committee and its acceptance implies no guarantee against possible faults of construction or use with a source of electrical current other than accumulators.

5. Costs of Examination

All expenses incurred by the SEMI Committee for examination of apparatus are the responsibility of the persons submitting the apparatus.

m.42 Core Functional and Safety Requirements of Apparatus (All weapons)

1. Registration and Non-registration of Hits

1. A hit made on the conductive piste or on the metallic parts of the weapon must not be registered by the apparatus.
2. Such hits may not prevent the registering of a hit made simultaneously by the opponent.

2. Protection Against Unauthorized Interruption

The apparatus must not have any device whereby anyone other than the person detailed to supervise it can interrupt its working during a bout.

3. Visual Signals

1. The apparatus should have a pilot light to show that it is switched on. This light must be dim and colorless.
2. The signal lamps must be placed on the top of the apparatus, in order that they may be visible to the Referee, the competitors and the superintendent of the apparatus. They must be so positioned that they show clearly from which side the hit was made.
3. Signal lamps may be fitted with translucent covers. These covers must be removable to allow the use of uncovered lights when venue conditions require it, such as strong sunlight or outdoor competition.
4. It must be possible to attach extension lamps to the exterior of the apparatus to increase the visibility of the signals.

4. Signal Persistence

1. Signal lamps, once activated, must remain lit until the apparatus is reset.
2. Signals must not extinguish or flicker due to subsequent hits or vibrations.

5. Reset Controls

The resetting switches must be placed either on top of or on the front part of the apparatus.

6. Power Supply

1. Apparatus must always be equipped with a socket to allow it to be powered either by 12 V DC via AC/DC converter or through VRLA batteries.
1. Apparatus must be based on a 12 volt supply with a tolerance of $\pm 5\%$.
2. If the apparatus is constructed to operate with dry batteries, it must be equipped with a voltmeter or some other device enabling the power in the batteries to be checked at any moment.
3. The wiring must be designed so that apparatus cannot become connected by mistake directly to the mains supply.

7. Integrated Clock and Score Display

1. Each central scoring apparatus used in official competitions must include an integrated match clock and score display (see m.43-m.45).
2. The clock and score display form part of the functional configuration of the apparatus for the purposes of approval and use.
3. The clock and score display must be clearly visible at all times to:
 - a. The Referee.
 - b. Both fencers.
 - c. Coaches and team officials in the field of play area.
 - d. Spectators in the competition hall.
4. Visibility must be ensured under normal indoor lighting conditions and under enhanced lighting used for finals and television production.
5. Any external scoreboard or display board used in addition to the central scoring apparatus must reproduce, without modification, the match time and scores generated by the approved apparatus.

8. Clock Resolution and Measurement Capability

1. The match clock must be capable of measuring and internally tracking time in units of one hundredth of a second for the entire duration of each bout and team relay
2. The internal time base stability and precision tolerances are specified in the Materials Homologation Handbook.
3. Any user visible display that presents the official bout time (on the central apparatus or on external display boards) must reproduce the time generated by this clock without applying independent rounding or filtering operations

9. Time Output to Video Refereeing System (VRS)

1. The central scoring apparatus must provide an electronic time output to the official Video Refereeing System.
2. The time output to the VRS must carry the current match time expressed in hundredths of a second, synchronized with the internal match clock described in this Book (m.42).

3. The time output interface, format, and update rate must comply with the specifications defined in the applicable Materials Homologation Handbook and any technical handbooks for scoring apparatus and video systems.
4. When the match clock is started, stopped, or reset, the corresponding state change must be reflected in the time output to the VRS without undue delay or loss of events, within the tolerances specified in the technical handbooks

10.Last Ten Seconds Display Behavior

During the last ten (10) seconds of each period in an individual bout and of each bout in a team match, the official match clock must change its display resolution to provide enhanced time indication.

1. The clock must show time to a tenth of second when the scoring apparatus is running
2. The clock must show time to a hundredth of second when the scoring apparatus is stopped
3. The timer should be provided with a remote start/stop device.

11.Clock Extensions for Finals

1. For finals of official FIE competitions, the clock must be equipped with:
 - a. A system connecting it to external extension clocks displaying large luminous numbers
 - b. A system for connection of the audible signal
2. These connection systems must be electrically isolated from the internal circuits of the apparatus in accordance with the specifications in the Materials Homologation Handbook.
3. The clock and remote control must operate the match clock defined in m.42.

12.Referee Remote Control- General Requirements

1. The match clock of the central scoring apparatus must be controlled by a remote control device intended for the Referee.
2. The remote control must provide a single, clearly identifiable control for the combined start–stop function of the match clock; no additional timing or reset functions may be assigned to the remote.
3. The remote control must be equipped with a visible LED indicator that confirms the operational status of the device and each transmitted command.
4. The design of the remote control must minimize the risk of accidental activation, taking into account typical Referee gestures and handling during a bout, as further specified in the applicable technical handbook

13.Referee Remote Control- Radio Communication

1. The communication between the Referee’s remote control and the match clock must operate via encrypted radio frequencies.

2. The radio protocol, frequency bands, encryption requirements, and coexistence rules with other wireless systems in the venue must comply with the specifications defined in the Materials Homologation Handbook and with all applicable regulatory requirements.
3. The radio link must be sufficiently robust that loss of connection, interference, or low battery conditions cannot cause unintended clock start or stop; any such fault conditions must default to a safe state defined in the technical handbooks

14. Audible Signals

1. Visual signals must be accompanied simultaneously by audible signals.
2. The audible signals will consist either of a short ring, or of a continuous note.
3. Duration must be automatically limited to one to two seconds.
4. The sound signal must be identical for both sides of the apparatus.
5. The apparatus may include a device which allows the sound signal to be stopped before the apparatus is reset.

15. Audible Signal Failsafe

When the cable connecting the audible-signal apparatus to the clock is disconnected:

1. The audible-signal apparatus must emit a sound of 80–100 decibels measured at the piste center line.
2. Duration must be 2–3 seconds.
3. The central judging apparatus must not be blocked.
4. The clock must not be stopped. (t.32)

m.43 Foil Central Judging Apparatus

1. Foil Apparatus Main Function

In addition to the core functional requirements of m.42, the central judging apparatus for foil must comply with the following:

1. At foil, the apparatus registers when a break occurs in the circuit of the foil.
2. The electrical current which is circulating permanently in the foil circuit is broken when a hit is made.

2. Foil - Registration of Hits

1. Any hit must cause a signal whatever the resistance of the circuits external to the apparatus.
2. A hit made on a part of the foil may register if an uninsulated part of the weapon of the fencer is in contact with his conductive jacket.
3. After registering a hit, whether on target or off target, the apparatus must no longer be able to register a subsequent hit on the same side of the apparatus.

4. No priority must be indicated between a hit registered against one competitor and a hit registered against his opponent.

3. Foil - Visual Signals

1. Hits are registered by light signals:
 - a. A red signal on one side when a hit is registered on target;
 - b. A green signal on the other when a hit is registered on target;
 - c. White signals on either side will indicate hits off the target.
2. At foil, when using the apparatus it should be noted that:
 - a. If a non-valid hit has been scored, the apparatus will not register a possible valid hit scored on the same side of the apparatus.
 - b. The apparatus does not indicate whether there is any priority in time between two or more hits which it registers simultaneously.
3. Yellow lamps serve only to indicate insulation faults (see m.43.5)

4. Foil – Sensitivity and Signal Registration

1. Any hit must cause a signal whatever the resistance of the circuits external to the apparatus. The duration of the break of contact which must always ensure that a signal is registered is $14\text{ ms} \pm 1\text{ ms}$
2. Depending on the increase in the resistance, the apparatus may register:
 - a. A valid hit only.
 - b. A valid hit and a non-valid hit simultaneously.
 - c. A non-valid hit only.
 - d. The resistance must always be less than 500 ohms for (a) and (b).
3. The contact time is the same for valid and non-valid hits.
4. The registering of a valid hit must be guaranteed when there is a break of contact of $14\text{ ms} \pm 1\text{ ms}$, when the exterior resistance is between 0 and 500 ohms.
5. A break of contact of $14\text{ ms} \pm 1\text{ ms}$ must always ensure that a signal is registered, when the exterior resistance is between 0 and 200 ohms.

5. Foil — Resistance Tolerance and Fault Conditions

1. The apparatus must be capable of tolerating an increase in the resistance in the closed circuit of the foils of up to 200 ohms, without causing a non-valid signal to register.
2. Even if the resistance of the foil earth circuit is increased up to 100 ohms, none of the following irregular phenomena must occur:
 - a. Hits are registered on the guard or on the piste;
 - b. Hits must not be registered merely by contact of the blade or the pointe arrêt (without depressing it) on the conductive jacket of either competitor.
3. When the blades are in contact, irrespective of the resistance in ohms between them, the apparatus must be capable of registering normally the hits exchanged, valid and non-valid.

4. Even if a fault in the insulation causes a short between a fencer's conductive jacket and weapon, the apparatus must still register both valid and non-valid hits.
5. The apparatus must be equipped with two yellow lamps:
 - a. The yellow lamp must light up and remain lit when the resistance between a fencer's conductive jacket and weapon is less than 450 ohms
 - b. The yellow lamp must not light up when this resistance exceeds 475 ohms.
6. If one or both of the yellow lamps remain lit, the Referee must stop the bout and call the technical experts to eliminate the fault.
7. The yellow lamps need not indicate any contact between the fencer's conductive jacket and the conductive piste.

6. Foil Lockout Operation

1. After the first hit is signaled, the apparatus must ignore all subsequent signals once the lockout period of 300 ms (± 25 ms) has elapsed.
2. This lockout period is a fixed technical interval unrelated to "fencing time" under the conventions of foil fencing.

7. Foil Testing and Authorization

1. Test programs for foil apparatus are defined in the Materials Homologation Handbook.
2. The Congress of the FIE has authorized this Committee to modify or add to the above requirements whenever technical improvements allow the construction of apparatus which can ensure the better operation of the electrical foil judging apparatus.

m.44 Épée Central Judging Apparatus

1. Épée Apparatus Main Function

In addition to the core functional requirements of m.42, the central judging apparatus for épée must comply with the following:

1. At épée, the apparatus registers when contact is established between the wires forming the circuit in the épée, thus completing the circuit.

2. Épée - Visual Signals

1. Visual signals include at least two signal lamps on each side of the apparatus, so designed that if one lamp does not function it does not prevent the other from lighting up nor cause an excessive current through the latter.
2. The signal lamps must give a red signal on one side of the apparatus and a green signal on the other.
3. The apparatus may include lights which indicate short circuits to earth. These must be orange in color.

3. Épée - Apparatus Resistance and Timing

1. The apparatus must register only the first hit which is made when the active circuit is completed (see m.20 for tip assembly travel requirements).
2. If the interval between two hits is less than 40 ms, the apparatus must register a double hit, with both signal lamps lighting simultaneously.
3. If the interval between two hits is greater than 50 ms, the apparatus must register only one hit.
4. The apparatus must not register hits made on earthed material (guard or conductive piste), even when the resistance of the earth circuit is up to 100 ohms.

4. Épée - Lockout Operation

1. When the external resistance is normal, that is 10 ohms, the apparatus must register hits when these are made with a duration of contact of 2–10 ms.
2. With an exceptional external resistance of 100 ohms the apparatus must still register a hit, but without any specific duration of contact.
3. The apparatus must not register signals of less than 2 ms duration.

m.45 Sabre Central Judging Apparatus

1. Sabre Apparatus Main Function

In addition to the core functional requirements of m.42, the central judging apparatus for sabre must comply with the following:

1. The apparatus works by contact between any uninsulated part of the sabre and the conductive surface of the opposing fencer's jacket, glove and mask.

2. Sabre - Visual Signals

1. For hits made on these valid conductive surfaces, the apparatus shows a red light on one side and a green light on the other.
2. If the guard or blade of a fencer's sabre is in contact with the conductive surface of his own equipment (signaled by a yellow light), a valid hit made by that fencer must still register.
3. The apparatus must be equipped with two yellow lamps, one on each side, which will indicate a contact between the guard or blade of a fencer's sabre and the conductive surface of his own equipment.
4. The apparatus must be equipped with two white lamps, identical to those on a foil apparatus which, if permanently illuminated, accompanied by a sound signal, indicate any abnormal electrical change in circuits B and C of the fencer at fault.
5. Hits made on non-conductive surfaces must not be signaled.

3. Sabre - Apparatus Resistance, Faults, and Timing

1. When the two blades touch, all the other rules should be strictly applied.

2. The apparatus should still function when the blades are in contact, or if there is contact between the blades and the guards, or between the two guards.
3. The apparatus must not signal a hit made by the blade whipping over to hit the opponent while in contact with his blade or guard.
4. After a hit has been registered, a subsequent hit made by the other fencer will only be registered if it occurs within a maximum of $170\text{ ms} \pm 10\text{ ms}$.
5. The apparatus should allow an increase in the exterior resistance of the connections up to 100 ohms without any drawbacks.
6. Should a fault in the insulation, down to 0 ohms, cause a leakage of current between a fencer's valid conductive surface and his weapon, the apparatus should still be capable of registering all hits exchanged.
7. The insulation fault will be signaled by the illumination of the yellow lamp on the side of the fencer whose equipment is at fault when the resistance is between 0 and 450 ohms.
8. The registering of a valid hit on the guard or blade of the fencer at fault will be allowed provided that the electrical resistance between the guard or the blade and the valid surface is less than 250 ohms.
9. Should there be a hit made by the whipping over of the blade which has not been signaled, whatever method has been used to prevent the signaling, after $15\text{ ms} \pm 5\text{ ms}$ from the contact of the blade with the valid target (the time for the registering of the whip) and unless there has been another hit, the apparatus should allow the normal registering of any subsequent hits.
10. A break in the control circuit (defined as more than 250 ohms) for $3\text{ ms} \pm 2\text{ ms}$ will be signaled by the illumination of the white lamp on the side of the fencer at fault.

4. Sabre - Lockout Operation

1. The duration of contact during which a signal should be ensured should be 0.1–1 ms.
2. An apparatus will be rejected if a hit can be registered with a duration of contact of less than 0.1 ms (time subject to modification)
3. If the contact between the blade and the opponent's target takes place 'through the blade', the apparatus:
 - a. Will register the hit between 0 and 4 ms (+ 1 ms);
 - b. Will prevent the hit being registered between 4 and 15 ms (+ 5 ms), on condition that the contact between the two blades is not interrupted more than a maximum of 10 times in the interval.

5. Sabre - Timing Adjustment

Timing for the apparatus may be varied in the light of experience and of laboratory tests carried out by the SEMI Committee.

m.46 Apparatus Selection for FIE Competitions

1. Apparatus Selection Conditions

1. For official FIE competitions, the organizing committee must provide a minimum number of electrical judging apparatuses equal to the number of pistes plus at least two spares.
2. The Organizing Committee must choose a manufacturer who will provide good quality equipment for smooth technical running of competitions.
3. For official FIE competitions, all scoring equipment must be in working order and homologated by the SEMI Committee.
4. As soon as a member federation is selected to organize an official FIE competition, it should contact the President of the SEMI Committee immediately to obtain names of manufacturers whose electrical apparatus is accepted by the Committee for use at their level of competition.

2. Apparatus for World Championships

1. Judging apparatus for World Championships must be approved for use at the World Championship level.
2. List of approved apparatus for World Championship level competitions can be requested from the SEMI.

3. Apparatus for Olympic Games

1. Judging apparatus for the Olympic Games must be approved by the SEMI Committee of the FIE.
2. In order to obtain this approval, the apparatus which it is proposed to use must be submitted complete, with spools, connections, etc., for an examination by a designated team of the SEMI Committee, at a place and on a date to be agreed with by the Committee, at least six months before the start date of the competition.
3. The apparatus must be accompanied by technical documentation, including but not limited to detailed drawings, CAD files, and be submitted digitally to the SEMI Commission and the FIE Office.

m.47 Apparatus Checking Procedures

1. Prototypes Approval and Procedures

1. In the case of using a prototype for a World Championships or a FIE competition:
 - a. Having chosen the manufacturer, the Organizing Committee must immediately advise the President of the SEMI Committee.
 - b. The President contacts the firm to obtain, as soon as possible, a prototype of the desired model.

- c. Control of fencing apparatuses must be done before competition using a checking device able to verify that apparatuses fulfill all requirements related to reaction times and electrical resistances.
2. The report on checking is presented to the manufacturer by the President of the Committee within one month of the apparatus being received.
3. Two possibilities exist:
 - a. The proposed apparatus is accepted, in which case other apparatuses can be manufactured like the prototype.
 - b. The apparatus does not conform to requirements, in which case it must be modified and re-submitted for new examination.
4. When all apparatuses are ready and before they are sent out, the President of the SEMI Committee must be notified for documentation of checking before they leave the factory.
5. Each apparatus comes with a test report giving specifications concerning:
 - a. Registering time in milliseconds
 - b. Resistance in ohms of external circuits before registering a non-valid hit
6. The person in charge of verification ticks off every apparatus and makes a note of its number.

2. Testing and Checking of Apparatus

1. A specific program of tests for an apparatus under different conditions can be supplied on request by the SEMI Committee of the FIE.
2. A specific program of tests also includes the checking of the functioning of the apparatus including but not limited to timing, lockout, lamp functionality.
3. Before every World Championship or Olympic Games, a delegate of the Organizing Committee must check:
 - a. Proper working of apparatuses to be used.
 - b. That they conform to the type registered. This is independent of the registration of the type of apparatus.
4. The apparatuses must be made available to this delegate at least 48 hours before the beginning of the competition.

Part 2: Connection Systems

m.48 Spools and Cables

1. Electrical Resistance Requirements

1. The maximum electrical resistance of each wire of the spool, measured from socket to socket, must be 3 ohms +1 ohm.

2. There must be no interruption of electrical contact even when the spool is being rotated at full speed
3. Contact rings of the spool must have double brushes.
4. The wire connected to the earth circuit of the weapon must be connected to the frame of the spool.

2. Cable Length and Safety Features

1. The spools must allow 20 m of cable to be unwound without straining the springs.
2. The socket which terminates the spool cable and receives the plug of the body wire at the fencer's back must include a safety device which fulfills the following requirements:
 - a. It is impossible to use it unless the plug is correctly put in.
 - b. It is impossible for it to become separated during the bout.
 - c. It is possible for the competitor to verify that the two foregoing requirements are satisfied.

3. Connecting Cables and Plug Specifications

1. The resistance of each of the three wires in the connecting cables must not exceed 2.5 ohms.
2. The plugs used to connect the body wire to the spool wire and the connecting cables to the spools and to the apparatus must have:
 - a. Three pins of 4 mm diameter arranged in a straight line.
 - b. Outer pins are spaced 15 mm and 20 mm respectively, from the center pin.
3. The body wire and the connecting cables have plugs; the spool wires and the central electrical apparatus have sockets.

4. Alternative Connection Systems

The use of suspended cables instead of spools is permitted, provided that the conditions already mentioned are satisfied.

m.49 Installation Requirements

1. Cable Length

The organizers must ensure that the spools have cables of at least 20 m in length so that they do not get ripped out in the event of a flèche made at the end of the piste.

2. Spool Placement

The spools must be placed close to the pistes, but outside them so that fencers do not trip over them.

3. Connecting Cable Construction

1. The cables connecting the spools to the apparatus should be of the three-core type.

2. They must be covered with rubber to protect them from humidity and blows.

4. Grounding the Pistes

Conductive pistes should be earthed at the center of the piste.

Part 3: Infrastructure Components

m.50 Conductive Pistes

1. Material and Resistance

1. The conductive piste must be made from metal, metallic mesh, or a substance that is conductive.
2. The piste must maintain conductivity once positioned and ready for fencing.
3. The resistance of the piste, from one end to the other, must not exceed 5 ohms.

2. Coverage Requirements

The conductive piste must cover the whole of the length and breadth of the piste including its extensions.

3. Platform-Mounted Pistes

1. When the piste is mounted on a platform, the conductive piste must cover the whole width of the platform.
2. The platform must not exceed 50 cm in height.
3. The platform must be wider than the fencing piste itself by at least 25 cm on each side.
4. Each end of the podium must be equipped with a gentle slope right down to ground level.

4. Length and Extensions

1. Because the amount of wire which spools can carry is limited, the conductive piste is designed for use on a piste 14 m long.
2. An extension of 1.5–2.0 m is added at each end of the piste to allow the fencer crossing the rear limits to retire on an even and unvarying surface.
3. The conductive piste must have a length of 17–18 m.

5. Platform Base Construction

1. The wooden bases are 12–15 cm above ground level.
2. The sides must not be sloping.
3. Must have a metal strip, screwed down if possible, which will keep down the edges of the conductive piste along the entire length of the base on both sides.

4. Pistes made of metallic mesh must never be placed directly on a floor of reinforced concrete or tiles.

6. Piste Lines and Indicators

The paint used to draw lines on the conductive piste must not prevent its electrical conductivity.

7. Safety, Maintenance and Testing Requirements

1. There must be no roller or any sort of obstacle at the ends of the conductive pistes which could prevent fencers from retreating normally
2. Pistes used in World Championships and Olympic Games must be tested before competition by the organizers to ensure the adherence to electrical specifications described in this Book and in the Materials Homologation Handbook .

m.51 Power Supply and Backup

1. If the sources of current for each side of the apparatus are separate, it may be 2×12 volts or 2×6 volts.
2. The separation of the supply for each side of the apparatus is recommended.
3. For official FIE competitions, the apparatus must be powered through external batteries or UPS (Uninterruptible Power Supply) with a minimum backup time of 5 minutes at full load.

m.52 Extension Lamps

1. Usage Requirements

1. Extension lamps outside the apparatus are obligatory for official competitions of the FIE.
2. Extension lamps must repeat scoring signals generated by the central apparatus (m.43-m.45)

2. Lamp Height and Placement

1. The lamps should be placed at a minimum of 1.80 m above the piste.
2. When fencers fence on a 0.5 m high podium, the extension lamps must be 2.30 m above ground.

3. Colored Lamp Specifications

1. The extension lamps signaling valid hits are colored: one red, the other green.
2. They must be at a minimum of 2600 lumens.

4. White Lamp Specifications

1. The white lights indicating non-valid hits must each provide a luminous flux of at least 1100 lumens.
2. The two lamps of the same group must not be further apart than 15 cm.

5. Lamp Arrangement

1. The white and colored extension lamps must be arranged on either side of the apparatus, either horizontally or vertically.
2. They must be visible from all directions.

6. Electrical Connection Protection

1. The exterior lamps of high intensity may be connected to the main electrical supply.
2. If exterior lamps are connected to the main electrical supply, the signals of the recording apparatus must be separated from the circuits of these lamps by phototransistors or by opto-couplers.

m.53 External Display Systems

1. Display Board Requirements for Championship and Grand Prix Finals

For World Championship and Grand Prix finals and Masters, it is obligatory to make use of a display board providing instantaneous information on:

1. Fencers' names
2. Score
3. Time
4. Other matters necessary for good understanding of the bout

2. Display Requirements — From Last 64 Onwards

1. Starting from the last 64 at World Championships and Grand Prix, it is mandatory to use a central apparatus with:
 - a. A large display or couple scoreboard.
 - b. Instant information on fencers' names, country, score, time.
 - c. The period of a bout or relay of a match.
 - d. Any penalty cards.
2. Display information must reproduce match time and scores generated under m.42, and m.43-m.45.

3. Display Requirements Zonal Championships and World Cups

This central apparatus is optional at Zonal Championships and World Cups.

Chapter 5: Weapons and Equipment Control

Part 1: Competence and Scope

m.54 Competence and Authority

1. Responsibility for Weapons and Material Control

1. Verification of compliance with the material requirements of this Book and the Materials Homologation Handbook is the responsibility of the SEMI Commission or, if the SEMI Commission is not present, then the responsibility is with the Directoire Technique / Supervisor.
2. Only members of the SEMI Commission or the Directoire Technique / Supervisor may require verification of detailed conformity to manufacturing specifications not readily verifiable by standard checking procedures.

2. Appointment and Authority of SEMI Delegate

1. Authority of the SEMI delegate is established in the FIE Statutes (see Functions of the Commissions 6.5)
2. Executive Committee of the FIE will appoint member(s) of the SEMI Commission to be responsible for supervision of electrical equipment and weapons control of the World Championships and for the Olympic Games, including but not limited to:
 - a. Checking of the fencers' weapon,
 - b. Checking of the fencers' clothing and equipment,
 - c. Electrical equipment provided by the organizers
 - d. Location of weapons control areas
 - e. Checking conformity to Field of Play
3. Other official FIE competitions including but not limited to World Cups, Grand Prix, the FIE will appoint one or more SEMI Commission members to be responsible for the supervision of electrical equipment and weapons control, including but not limited to:
 - a. Checking of the fencers' weapon,
 - b. Checking of the fencers' clothing and equipment,
 - c. Electrical equipment provided by the organizers.
 - d. Approving location of weapons control areas
 - e. Checking conformity to Field of Play

3. Authority of Weapons Control Personnel

1. Weapons Control personnel have the authority to:
 - a. Examine any weapon or equipment presented for competition use.
 - b. Test weapons and equipment using approved checking apparatus.

- c. Approve conforming material by affixing checking marks.
 - d. Reject non-conforming material.
 - e. Refer irregular or suspicious material to the SEMI representative or Directoire Technique / Supervisor (see m.59-m.60 and m.58).
- 2. The decisions of Weapons Control personnel regarding material compliance are binding and can be appealed only to the SEMI representative. If the SEMI representative is not present, then the Directoire Technique / Supervisor can be appealed to.

4. Competence Requirements

- 1. Weapons Control personnel must be trained in:
 - a. The material requirements of this Book.
 - b. The proper use of checking apparatus and gauges.
 - c. The identification of non-conforming or irregular material.
 - d. The procedures for marking and rejecting equipment.
- 2. Training standards and certification procedures are defined by this Book, the Homologation Handbook, and the FIE.

m.55 Scope of Equipment Checking

1. Equipment Subject to Checking

- 1. All weapons and equipment used in competition must be checked for compliance with this Book.
- 2. Equipment subject to checking includes, but not limited to:
 - a. Weapons and their corresponding parts;
 - b. Body wires;
 - c. Conductive jackets;
 - d. Masks;
 - e. Protective clothing and equipment (e.g. chest plates, etc.);
 - f. Gloves;
 - g. Field of Play equipment;
 - h. Other equipment (e.g. weights and shims, gabarit, etc.);
 - i. Any other equipment specified by the Directoire Technique (see Chapters 2 and 3)

2. Timing of Equipment Checking Times

Equipment checking must take place:

- a. Prior to the start of competition.
- b. During the competition when the fencers are required to present themselves officially in the call room in the time period as posted on the colored pistes.

- c. At any time during competition at the request of a referee, the Directoire Technique, or a SEMI representative.
- d. Following any repair or modification of equipment during competition (see m.56-m.60).

3. Fencer's Obligation to Present Equipment

- 1. Each fencer is responsible for ensuring that all equipment they intend to use in competition is presented for checking in accordance with the procedures established by this Book.
- 2. Failure to present equipment for checking, or use of unchecked equipment, is subject to penalties as specified in the competition rules and in cases of irregular equipment under m.58.

Part 2: Presentation and Checking Process

m.56 Presentation of Equipment to Weapons Control

1. Submission Requirements

- 1. Fencers must present their equipment to the Weapons Control area during the timetable of each official competition.
- 2. Equipment must be presented in a manner that facilitates efficient checking (see m.55 for scope):
 - a. Weapons must be fully assembled and ready for testing.
 - b. Electrical components must be functional.
 - c. Equipment must be clean and in condition for inspection.
- 3. Each head of delegation must indicate where they can be contacted should a serious fault be detected while the equipment belonging to their fencer is being checked.
- 4. Presentation to weapons control is allowed on the morning of the day before the competition. Presentation to weapons control after 17:00 on the day before each event may result in a refusal.

2. Submission Limits and Provisions

- 1. Quantity limits are established to ensure efficient processing of equipment and equitable access to checking services.
- 2. Maximum number of items that may be presented for checking, include:
 - a. Maximum number of four (4) weapons per fencer;
 - b. Maximum number of three (3) body wires per fencer;
 - c. Maximum number of two (2) conductive jackets per fencer;
 - d. Maximum number of two (2) masks per fencer;
 - e. Maximum number of three (3) mask-to-jacket leads per fencer.

3. For foil weapons only, weapons must be submitted with bare points not covered with adhesive tape over the first 15cm

3. Identification and Labeling

1. Fencers must provide identification for all equipment submitted for checking.
2. The Weapons Control area may require:
 - a. Equipment to be placed in labeled bags or containers.
 - b. Contact information for the fencer or their delegation.
 - c. Indication of the fencer's weapon and competition events.
3. The Weapons Control area is responsible for maintaining organization and security of equipment during the checking process.

4. Collection of Checked Equipment

1. Fencers or their designated representatives must collect checked equipment in accordance with the timetable of each official competition of the FIE.
2. The Weapons Control area may establish specific times for collection to facilitate efficient operations.
3. Optimally, submitted equipment should be available for collection at the end of the same day of submission.
4. The fencer or the team captain can only insist on the return of the equipment which has been checked one hour before the start of the event.

5. Checking Process Workflow

1. Equipment is checked in the order in which they arrive or by an order as directed by the SEMI delegate.
2. Equipment checking typically follows this workflow:
 - a. Submission: Fencer presents equipment at the Checking Area.
 - b. Inspection: Weapons Control personnel examine and test equipment.
 - c. Decision: Equipment is approved (marked) or rejected.
 - d. Return- Approved: Approved equipment is processed in accordance with m.59 and equipment is returned to the fencer.
 - e. Return – Non-conforming: Non-conforming is handled in accordance under m.60.

m.57 Weapon Length Measurement

1. Total weapon length must be measured between Plane A and Plane E in accordance with m.4.
2. Blade length and any other dimensional distances must be measured between the relevant planes as defined in m.4.

3. The applicable maximum lengths for each weapon are defined in the weapon-specific articles of this Book, including but not limited to m.6 (foil), m.14–m.15 (épée), and m.23 (sabre).
4. Weapons Control must use a rigid measuring device ~~with millimeter graduations or an equivalent fixed gauge and~~ must align the weapon along the axis of the blade for measurement.
5. Measurements are read to the nearest millimeter. Because of normal reading and alignment uncertainty with such devices, small apparent overruns up to 2 mm may occur without providing any significant advantage or affecting safety.
6. In cases where the reading is ambiguous because of parallax, alignment, or blade curvature during measurement, Weapons Control must repeat the measurement.
7. Interpretation and consequences of non-conforming length measurements are in m.59-m.60.

m.58 Irregular Equipment and Penalties

1. Detection of Irregular Equipment

1. If material or equipment presented to the Weapons Control area appears to have been assembled in such a way that the fencer can control at will the registering of hits or the malfunctioning of the judging apparatus, the equipment must be referred to the SEMI representative or Directoire Technique.
2. Irregular equipment includes, but is not limited to:
 - a. Equipment with concealed switches, contacts, or circuits.
 - b. Equipment with components designed to circumvent the rules.
 - c. Equipment modified to allow manipulation of electrical circuits during fencing.
 - d. Equipment that does not conform to approved designs or specifications.

2. Examination and Evidence

1. The SEMI representative or Directoire Technique must examine irregular equipment to determine:
 - a. The nature and extent of the irregularity.
 - b. Whether the irregularity constitutes intentional rule violation.
 - c. The identity of the person who submitted the equipment.
2. Irregular equipment may be retained as evidence and may be subject to detailed examination or testing.

3. Penalties for Irregular Equipment

1. After examination of irregular items, the SEMI representative may require a penalty against the person who submitted them.

2. Penalties are imposed in accordance with the disciplinary procedures set out in the competition rules and may trigger homologation review under m.68-m.73.
3. The severity of penalties may depend on:
 - a. The nature and extent of the irregularity.
 - b. Whether the irregularity appears intentional.
 - c. Whether similar irregularities have been detected previously.

4. Reporting and Documentation

1. All instances of irregular equipment must be documented and reported to the FIE.
2. Documentation must include:
 - a. Description of the irregularity.
 - b. Photographs or physical evidence where appropriate.
 - c. Identity of the person who submitted the equipment.
 - d. Penalties imposed or recommended.
3. Irregular equipment may also be subjected to homologation review under m.68-m.73 where applicable.

Part 3: Marking and Post-Check Handling

m.59 Marking of Approved Material

1. Requirements for Checking Marks

1. Equipment that is checked and approved for use in competition must be distinctively marked to indicate that it has passed inspection.
2. Only equipment bearing valid checking marks may be used in competition (see m.55).
3. Use of equipment that does not bear valid checking marks is subject to penalties as specified in the competition rules and may constitute a breach of m.2.

2. Types of Checking Marks

1. Checking marks may include:
 - a. Adhesive labels affixed to weapons or equipment.
 - b. Special ink or paint applied to weapons (guards, blades, points).
 - c. Stamps affixed to conductive jackets.
 - d. Electronic tags or other identification methods approved by the FIE.
2. Checking marks must be:
 - a. Distinctive and difficult to counterfeit.
 - b. Durable enough to remain intact throughout the competition.
 - c. Visible to referees and control personnel.

3. Application of Checking Marks

1. Checking marks are applied by Weapons Control personnel after equipment has been verified to conform to this Book.
2. The location and method of applying the checking marks is determined by the SEMI representative and must be consistent throughout the competition.

4. Validity of Checking Marks

1. Checking marks are valid only for the competition for which they were issued (see m.56 for presentation and m.60 for re-checking).
2. Checking marks from previous competitions are not valid and must be removed before new checking marks are applied.
3. Equipment that has been repaired, modified, or altered after checking must be re-checked and re-marked before it may be used.

5. Verification by Referees

Referees are responsible for verifying that all equipment used in bouts under their supervision bears valid checking marks.

m.60 Handling of Rejected or Repaired Equipment

1. Rejection of Non-Conforming Equipment

1. Non-conforming equipment identified at Weapons Control falls into two categories:
 - a. Repairable equipment, which does not meet one or more requirements of this Book but can be brought into conformity by repair or adjustment.
 - b. Unsafe equipment, which presents a clear safety risk (for example, masks with damaged mesh or holes in vital areas, broken blades, or torn protective clothing exposing vital areas) must not be returned to service.
2. Repairable equipment may be returned to the fencer for repair in accordance with m.60.3–m.60.7.
3. Unsafe equipment (as defined in m.2, m.27, and m.28) may be confiscated or rendered visibly unusable by Weapons Control or by the Referee in the presence of the person who presented the equipment to the weapon check or the team captain of the fencer concerned, and must not be returned to service in the competition.
4. Rejected equipment that is unsafe must be distinctively marked to indicate that it may not be used in competition (see m.2).
5. Rejection marks for conductive jackets must be paint or ink of a distinctive color.
6. Rejection marks must be marked by a member of the SEMI Commission, if available, or by the weapons checking personnel.

2. Communication of Rejection Reasons

When equipment is rejected, Weapons Control personnel must inform the fencer or their representative of (see m.2, m.56, and Chapter 2-3):

1. The specific reason(s) for rejection.
2. The requirements that must be met for approval.
3. The procedures for repair and re-checking.

3. Repair of Rejected Equipment

1. Rejected equipment may be repaired during the competition if repair facilities are available.
2. Repairs must bring equipment into full conformity with this Book.

4. Re-Checking of Repaired Equipment

1. Repaired equipment must be re-submitted to the Checking Area for checking if intended for use in the competition (see m.56).
2. Re-checking of repaired equipment will be carried out only after the initial round of checking of all fencers' equipment has been completed.
3. Repaired equipment that passes re-checking must be marked with valid checking marks.

Part 4: Equipment Checking Resources and Infrastructure

m.61 Organizers' Obligations for Checking Resources

1. General Obligation

1. The Organizing Committee of the competition must provide the equipment, personnel, and facilities necessary to carry out weapons and equipment checking in accordance with this Book.
2. The scope and scale of checking resources must be appropriate to the size and level of the competition (see m.54-m.56).

2. Required Checking Apparatus

The Organizing Committee must provide the FIE technical delegates responsible for checking with at least the following apparatus:

1. Gauges for Dimensions

Two or more gauges of:

- a. Blade lengths (foil, épée, sabre).
- b. Guard diameters and depths (all weapons).
- c. Handle lengths.

- d. Other dimensional requirements specified in Chapters 1–3.

2. Flexibility Testing Devices

Devices for measuring the flexibility of blades at foil, épée, and sabre in accordance with the test procedures specified in Chapter 2.

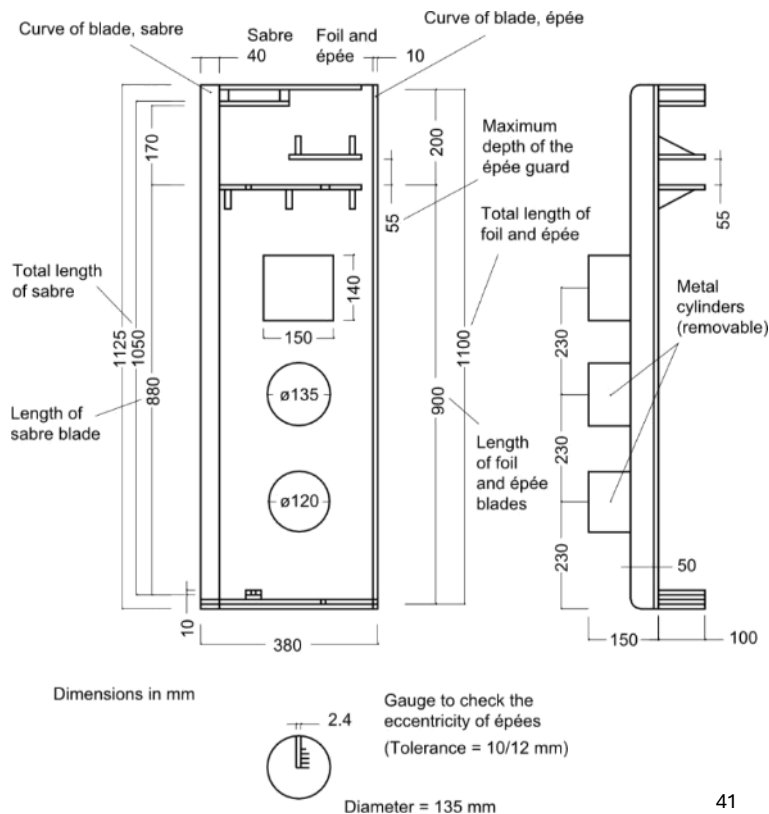


Figure 28: Example of Testing Gauge (Gabarit)

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3. Mask Resistance Testing Devices

Devices for testing the resistance of mask mesh to deformation in accordance with the standards specified in Chapter 3.

4. Electrical Testing Apparatus

Electrical checking devices capable of quickly verifying:

- a. Electrical resistance of body wires.
- b. Correct assembly of body wires and weapons.
- c. Resistance of conductive jackets.
- d. Functionality of tip assemblies.
- e. Continuity of electrical circuits.

5. Spring Pressure Testing Weights

- a. Weights of 500 g (± 2 g tolerance) for testing foil tip springs (see m.10).

- b. Weights of 750 g (± 3 g tolerance) for testing épée tip springs (see m.20).
- c. Weights must be provided:
 - i. At all locations that conduct official weapons control.
 - ii. At each piste during competition.

6. Tip Travel Gauges

- a. Devices allowing accurate measurement of (see m.10, m.20 and m.57):
 - i. Travel tolerance (épée).
 - ii. Residual travel (épée).
 - iii. Total travel (foil and épée).
- b. Gauges must be provided both:
 - i. At all locations that conduct official weapons control.
 - ii. At each piste during competition.

7. Checking Marks and Labels

Sufficient quantities of:

- a. Adhesive labels for approved equipment.
- b. Adhesive labels for rejected equipment.
- c. Special ink or paint for marking weapons.
- d. Stamps for marking conductive jackets.
- e. Any other marking materials specified by the Directoire Technique and/or the SEMI.

8. Additional Apparatus for Major Competitions

At World Championships and Olympic Games:

- a. Additional testing equipment may be required by the FIE
- b. Additional testing equipment must be reviewed and approved by a group that consists of at least the SEMI President or their designee and the FIE Executive Committee Representative of the SEMI or their designee and one additional SEMI Commission member.

3. Conductive Jacket Checking and Stamping

1. The Organizing Committee must provide a special stamp to be affixed to each conductive jacket after its electrical resistance has been verified.
2. The checking stamp on a conductive jacket indicates that resistance has been tested (see m.30 and m.59) but does not constitute final approval for use.
3. The referee makes the final decision on whether a conductive jacket may be used.
4. The referee must verify before each bout that:
 - a. The conductive jacket bears a valid checking stamp, AND
 - b. The conductive jacket entirely covers the valid target area;
 - c. The jacket is in good condition with no holes or defects.

4. Marking Materials for Weapons

Special ink or paint must be provided to mark the guards, blades, and points of weapons that have been checked and approved.

5. Facilities, Equipment, and Workspace

1. The Organizing Committee must provide adequate facilities for weapons checking, including (see m.56 and m.62):
 - a. Sufficient workspace for checking teams to operate efficiently.
 - b. Adequate lighting for inspection of equipment.
 - c. Secure storage for equipment awaiting checking or collection.
 - d. Separate areas for checking stations and repair workshops (if provided).
 - e. Access to electrical power for testing apparatus.
2. The organizers must make available equipment for immediate repair of the piste.

6. Approval, Calibration and Maintenance of Gauges

1. All checking apparatus must be calibrated and maintained in accordance with the manufacturer's specifications and FIE standards.
2. The Directoire Technique and/or the SEMI, if applicable, may verify calibration of checking apparatus before or during the competition.
3. The checking gauge as specified in Figure 28 (the Gabarit) requires shop-drawing (CAD drawings) showing measurements and tolerances to be submitted and approved by the SEMI Commission prior to manufacture.

m.62 Weapons Control Staffing and Organization

1. Weapons Control Staffing Composition

1. To carry out checking properly and efficiently, the Weapons Check can be organized into teams.
2. Each team should consist of a minimum of four leads with assigned roles:
 - a. First person: Checks weapons for dimensional conformity by passing them through gauges and conducting visual inspection.
 - b. Second person: Conducts all electrical tests (body wires, weapons, conductive jackets).
 - c. Third person: Affixes checking marks to approved equipment and returns equipment to fencers' bags or storage.
 - d. Fourth person: Manages the operations and flow of the checking operations

2. Number of Stations

1. The number of checking stations must be appropriate to the size of the competition.
2. For major competitions, a minimum of three stations should be provided to ensure efficient processing of equipment.

3. The number of checking stations required is based on:
 - a. Number of fencers;
 - b. Amount of equipment to be checked;
 - c. Time available for checking;
 - d. Competition schedule.

3. Workflow Through Weapons Control

1. Equipment should flow through each station:
2. Dimensional Checking (as required by m.4, m.6, m.14, m.23, and m.57):
 - a. Visual inspection of weapons.
 - b. Gauge testing for length, diameter, depth (see m.4, m.6, m.14, m.23 and m.57).
 - c. Flexibility testing of blades.
 - d. Identification of obvious defects.
3. Electrical Testing (as required by m.9, m.10, m.20, m.26 and Chapter 4):
 - a. Body wire resistance and continuity testing.
 - b. Weapon electrical circuit testing.
 - c. Conductive jacket resistance testing.
 - d. Tip assembly pressure and travel testing.
4. Marking and Return:
 - a. Application of checking marks to approved equipment (see m.59).
 - b. Application of rejection marks to non-conforming equipment (see m.60).
 - c. Recording of checked equipment.
 - d. Return of equipment to storage or fencer.
 - e. Equipment that fails at any station must be removed from the workflow and handled in accordance with m.60.

4. Coordination and Supervision

1. The SEMI representative supervises the operation of checking stations:
2. Supervision includes:
 - a. Ensuring consistent application of checking standards;
 - b. Resolving questions or disputes regarding conformity;
 - c. Managing workflow and queue priorities;
 - d. Addressing irregular equipment in accordance with m.60.

5. Communication with Fencers

The Weapons Control should establish clear procedures for:

- a. Informing fencers of checking schedules;
- b. Notifying fencers when equipment is ready for collection;
- c. Explaining rejection reasons;
- d. Providing information about repair and re-checking procedures.

Part 5: Overview of Organizers' Electrical Equipment

m.63 Electrical Judging Equipment Provided by Organizers

1. Scope of Organizer-Provided Equipment

1. The electrical judging system for competition includes equipment provided by the Organizing Committee which consists of, but not limited to:
 - a. The central judging apparatus with extension lamps.
 - b. Spools with cables and connections, or cables suspended overhead.
 - c. The conductive piste(s).
 - d. The source of electrical current.
 - e. For finals of official FIE competitions: a clock linked to the apparatus controlling the audible signal and electrical registering of hits (see Chapter 4).
2. Detailed specifications for equipment (central judging apparatus -- wired and wireless, spools, cables, connectors, piste(s), power source, clock and timing systems, and prohibited equipment) are set out in Chapter 4.
3. Where conflicts arise between this article and Chapter 4, the provisions of Chapter 4 prevail.
4. Wireless apparatus is optional at the Veterans World Championships.

Chapter 6: Homologation of Fencing Equipment and Materials

m.64 Purpose and Principles

1. Fencing material used in official FIE competitions and carrying the FIE logo must, without exception, have obtained a valid FIE homologation certificate confirming that the specific item of material complies with all applicable FIE Rules including the competition requirements (Chapters 2-5).
2. The homologation procedure is carried out by the FIE SEMI Commission under the supervision of a representative of the FIE Executive Committee (COMEX) (m.65).
3. A homologation certificate is issued only after the equipment has successfully passed the complete homologation process described in this Chapter and in the relevant technical handbooks.
4. Manufacturers must wait for the homologation process to be completed, the result to be published and the certificate to be issued before beginning production and/or commercialization of equipment bearing the FIE logo, marks and label (m.70).

m.65 SEMI Commission and Expert Involvement

1. SEMI Commission Responsibilities

1. Review and approval of homologation applications.
2. Oversight of laboratory testing and certification.
3. Maintenance of approved equipment lists.
4. Quality control and random testing.
5. Investigation of non-conforming equipment.
6. Recommendation of penalties for violations.

2. Expert Involvement

1. When necessary, the SEMI Commission may consult external experts from relevant technical fields in order to ensure the quality and reliability of the homologation process.
2. For software homologation, the presence of a delegate from the Rules Commission is mandatory.
3. For video-refereeing systems, the presence of a delegate from the Refereeing Commission is mandatory.

m.66 Equipment for Homologation

1. Homologation is compulsory for at least the following categories of equipment:
 - a. Blades.
 - b. Points (foil and épée). (m.66.4)

- c. Protective clothing (jackets, breeches, under-plastrons).
 - d. Masks and gloves.
 - e. Fencing scoring apparatus (wired and wireless).
 - f. Conductive pistes.
 - g. Video-refereeing systems.
 - h. Competition management software.
2. This list is not exhaustive. The FIE Executive Committee may extend the list of equipment requiring homologation at any time.
 3. Homologated equipment must also comply with the competition-side obligations in this Book.
 4. Traditional pointes d'arrêt of standard design are accepted for use in FIE competitions without requiring separate homologation. All other pointe d'arrêt designs require homologation under this Chapter.

m.67 Homologation

1. Process

The request for homologation must follow the process detailed in the Materials Homologation Handbook.

2. Laboratory

The list of specialized institutes and/or laboratories approved by the SEMI Commission is updated regularly and communicated to the Executive Committee.

3. Provisional Homologation

1. For equipment that must be evaluated under competition conditions, the SEMI Commission may grant a provisional homologation limited to use at one specific competition.
2. The competition used for such testing is agreed between the SEMI President, the representative of the Executive Committee, the supplier, and the organizer of the selected competition.

4. Final Analysis and Issuing of the Certificate

1. Every member of the SEMI Commission must receive the full documentation.
2. Full homologation documentation is not made publicly available.
3. Only the President or their designee may issue the FIE Certificate
4. The FIE Certificate must either be issued physically with the signature of the SEMI President or their designee or use software that provides a digital certificate.

5. Publication

1. Final homologation decisions are published on the FIE website.

2. CE/EC certificates and test reports are issued by specialized institutes; the SEMI Commission maintains and publishes lists of equipment that has obtained FIE homologation, together with the corresponding certificates.

m.68 Homologation Modification Management

1. Homologation remains valid for the duration specified in the issued certificates and relevant technical handbooks, provided that no modification is made to the equipment or to its manufacturing process (see Materials Handbook).
2. Any modification to homologated equipment that affects the safety or performance of the original equipment must be reported immediately to the President of the SEMI Commission.
 - a. Modified equipment must undergo the full homologation process again.
 - b. Modifications include any change affecting:
 - i. External appearance.
 - ii. Composition or materials.
 - iii. Internal structure or content.
 - iv. Software, firmware, or embedded logic.
 - v. Manufacturing process or any other element relevant to safety or performance.

m.69 Technical Handbooks

1. Technical handbooks are drawn up by the SEMI Commission and submitted to the Executive Committee for approval.
2. Each category of equipment has its own specific technical handbook setting out:
 - a. Detailed technical requirements.
 - b. Test methods and acceptance criteria.
 - c. Validity periods and conditions for re-homologation.
3. These handbooks are referenced through this Book, including m.27, m.28, m.42 and Chapter 5.

m.70 FIE Mark and Label of Quality

1. The FIE emblem is a registered trademark.
2. The emblem and any FIE label of quality may only be affixed to equipment that has successfully completed the FIE homologation process, holds a valid homologation certificate and is a supplier of good standing with the FIE.
3. By affixing the FIE label of quality to their equipment, manufacturers guarantee that all such marked equipment complies with the technical and safety requirements of the FIE.
4. The FIE label of quality must remain visible and legible.

5. Misuse may result in actions under m.71, m.72, and m.73.

m.71 Expenses

All expenses and costs related to the homologation, re-homologation, periodic checks and modification-related reviews of equipment, including but not limited to masks, blades, breeches, jackets, under-plastrons, pistes, scoring apparatus, software and video systems, are borne by the applicant.

m.72 Withdrawal, Suspension, or Reinstatement of Homologation

1. Homologation may be withdrawn or suspended by the SEMI Commission if it becomes aware that:
 - a. The homologated equipment no longer conforms to the applicable FIE Rules; or
 - b. Consistent non-conformities identified during competition checking (Chapter 5); or
 - c. After homologation has been granted, the equipment or its manufacturing process has been significantly modified, and the modification has not been submitted for a new homologation.
2. In case of withdrawal, suspension or reinstatement, the SEMI Commission informs the manufacturer and publishes the decision and its effective date on the FIE website.
3. Reinstatement of homologation follows the procedure specified in the Materials Homologation Handbook.
4. The SEMI Commission may, in addition to withdrawal or suspension, impose the following measures:
 - a. Formal warnings.
 - b. Requirements for corrective action within a specified timeframe.
 - c. Financial penalties, the schedule and amounts of which are determined by the FIE.
 - d. Temporary prohibition from submitting new homologation applications for a specified period.
 - e. Public notification of non-conformity findings.
5. Penalty types for these measures are detailed in the Materials Homologation Handbook (mh.10).

m.73 Quality Control

1. Homologated equipment must be subject to ongoing periodic reviews following approval to maintain homologation status. The periodic review requirements,

including frequency and method of evaluation are defined separately for each weapon and category of equipment (see Materials Handbook).

2. The applicable periodic review schedule, including any periodic evaluation requirements, is established and published through official FIE channels.
3. The FIE reserves the right to amend the periodic review schedule and associated requirements.
4. Failure to complete periodic checks within the timeframes specified in the relevant technical handbooks may result in withdrawal of homologation under m.72.
5. The SEMI Commission may obtain random samples of any specific item of fencing equipment available on the market that is claimed to be FIE-homologated.
6. These samples may be subjected to technical analysis for quality control purposes.
7. If there is any doubt as to the quality of the item, the SEMI Commission may send it directly to a certified independent institute for testing.
8. Tests are carried out in accordance with the applicable FIE material rules and relevant regulatory standards.
9. If the tests reveal any non-conformity or degradation in quality, the SEMI Commission takes appropriate measures, which may include those specified in m.72.
10. In serious cases, the manufacturer may lose an existing FIE homologation for the equipment concerned (m.72, m.68).

Note 1: Distinction Between Homologation and Event-Specific Approval

1. The homologation process described in this Chapter is distinct from the event-specific approval process for scoring apparatus described in Chapter 4, Section 2 (Authorization and Event-Level Approval).
2. Homologation concerns manufacturer compliance (Chapter 6): Certifies that a design and manufacturing process for a category of equipment meets FIE technical and safety standards. Valid for the duration specified in technical handbooks, across all competitions.
3. Event-specific apparatus approval concerns use at a particular competition (Chapter 4, Section 2): Approves a specific set of scoring apparatus, spools, and connections for use at one World Championship or Olympic Games.
4. Both processes are required for scoring apparatus used at official FIE competitions.