

**NEW MASKS FOR FOIL WITH CONDUCTIVE BIB**  
**MANUFACTURERS AND USERS GUIDELINES**  
*NOTICE TECHNIQUE DE FABRICATION DU NOUVEAU*  
*MASQUE AVEC BAVETTE CONDUCTRICE POUR LE FLEURET*

At the FIE's Congress 2007 it was unanimously decided by the participating countries that : « from the 1st January 2009 the use of new foil masks with a valid target bib would be mandatory at the Seniors FIE Official competitions (World Cups, Grand Prix and World Championships, OG) ».

**I FIE Rules for the new masks for foil with conductive bib**

Consequently the FIE rules concerning the valid target at foil are as follows.

**TARGET Limitation of the target**

t.47.1. At foil, only hits which arrive on the target are counted as valid.

t.47.2. The target at foil excludes the limbs and the head. It is confined to the trunk, the upper limit being the collar up to 6 cm above the prominences of the collar bones; at the sides to the seams of the sleeves, which should cross the head and the humerus; and the lower limit following a horizontal line across the back joining the tops of the hip bones, thence by straight lines to the junction of the lines of the groin. (FROM JAN.2009 It also includes the part of the bib beneath a horizontal line 1,5 to 2 cm below the chin and which, in any case, may not be lower than the line of the shoulders ) (see Figure 4)

*Surface Valable - Limitation de la Surface Valable*

*Application 1er janvier 2009 t.47.2 La surface valable exclut les membres et la tête. Elle est limitée au tronc, en s'arrêtant, vers le haut, au sommet du col, jusqu'à six centimètres au-dessus du sommet des clavicules; sur le côté, aux coutures des manches, qui devront passer par la pointe de l'humérus; vers le bas, suivant une ligne qui passe horizontalement dans le dos, par les sommets des hanches et qui rejoint de là, par une ligne droite, le point de jonction des plis des aines (Cf. schéma ci-dessous). Elle comprend aussi la partie de la bavette en dessous d'une ligne horizontale entre 1,5 et 2cm au-dessous du menton qui, en tout cas, ne peut pas être plus bas que la ligne des épaules.*

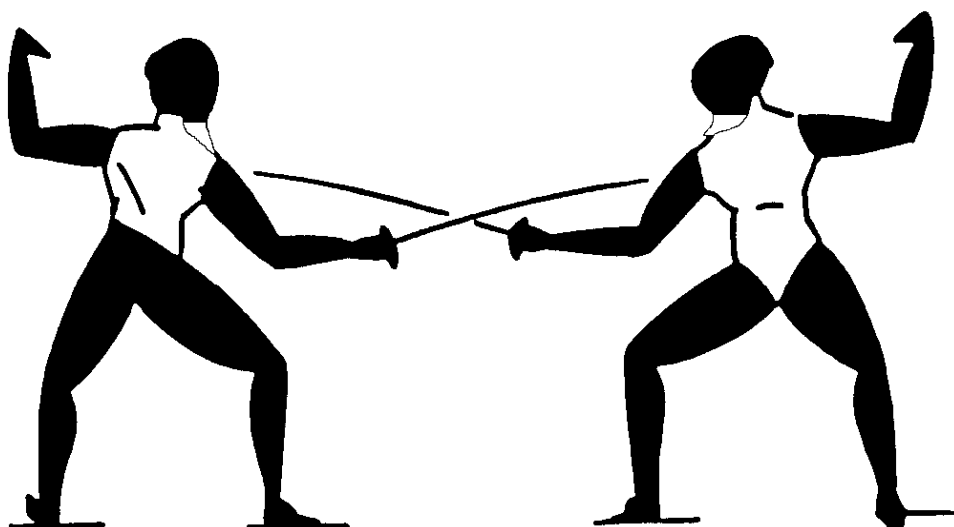


Figure 4. Valid target at foil (bib only from JAN 2009)  
*Surface valable au fleuret (dès janvier 2009)*

## **RULES SPECIF TO FOIL**

Mask (cf. m.25,7)

m.27.1.The mesh of the mask must not extend below the chin. It must be insulated internally and externally by a plastic material resistant to impact.

m.27.2.(FROM JAN 2009) The part of the bib that is beneath a horizontal line 1.5 - 2cm below the chin, must be entirely covered with a material that has the same conductive characteristics as the conductive jacket.

m.27.3.Means of connection: the electrical contact between the conductive jacket and the mask must be ensured by means of a white coloured wire and one or two crocodile clips (cf.m.32.4).

## **REGLES SPECIFIQUES AU FLEURET**

*Masque*

*m.27.1 Le treillis du masque doit s'arrêter obligatoirement au menton du tireur. Il sera isolé intérieurement et extérieurement, avant tout montage, par une matière plastique résistant aux chocs.*

*m.27.2 La partie de la bavette sous une ligne horizontale de 1,5 à 2 cm en dessous du menton doit être entièrement recouverte d'une matière ayant les mêmes caractéristiques conductrices que la veste conductrice.*

*m.27.3 Moyen de connexion : le contact électrique entre la veste conductrice et le masque doit être assuré à l'aide d'un fil et d'une ou deux pinces crocodiles (cf. m.32.4).*

Urgent Letter 8-08 18 April 2008

Electric bib in foil

Following the decisions taken by the 2007 Congress, and at the request of the manufacturers, the new bib in foil will be mandatory as of 1 January 2009 for senior competitions, and as of 1 October 2009 for the junior competitions.

*Lettre urgente 8-08 18 avril 2008*

*Bavette électrique au fleuret*

*Suite aux décisions du Congrès 2007 et à la demande des fabricants, la nouvelle bavette au fleuret sera obligatoire dès le 1er janvier 2009 pour les compétitions seniors et dès le 1er octobre 2009 pour les compétitions juniors.*

## **II How to get the FIE approval (homologation) for a mask with a conductive bib**

In order to get the FIE approval of their masks for foil with a conductive bib, manufacturers must address by email to the FIE's SEMI commission address [jecdossantos@gmail.com](mailto:jecdossantos@gmail.com)

1. A written request of a FIE's approval (*homologation*).
2. A drawing with the dimensions of the mask and photos.
3. A small description of the masks and the materials employed.
4. The file of fabrication, the CE certificate and the full CE tests made according with the EN13567. It's clarified that according with the consulted experts opinion: if a mask has already obtained the CE certificate and passed the EN13567 tests, the fact that now an extra layer of conductive fabric is added doesn't reduce the security and this variation can be tolerated, so a CE new test is not need ! If the mask is entirely new it must be submitted to the CE tests.  
However in all cases the manufacturer must always send the CE certificate and the CE test report to the SEMI commission.
5. The manufacturers must send by mail a physical sample of their mask for foil with a conductive bib, and also one free bib not installed to be analysed. . In order to understand the design of the conductive bib see paragraph V "The conductive bib". Also the drawing of the FIE label of quality that the

manufacturer intends to use must be sent by email for approval, this will permit to establish a file with all the valid labels of quality approved by the FIE.

6. For the new marks for foil with a conductive bib, the sample of the mask and of the bib must be the final product. It's mandatory that the masks have the approved FIE label of quality, in fabric, placed in a visible way and sewed in the inside of the bib. No logos are allowed in the external area of the masks, neither in the elastic safety strap at the rear of the mask. The only external logo allowed is in the label of quality in the spring of the mask, and must be the one of the manufacturer of the mask. However all and any logos can be placed in the interior of the mask.

Is reminded that for masks the FIE label of quality has a maximum diameter of 2,5cm, containing inside: the letters corresponding to the name of the manufacturer, the letters FIE, for this case the year 2009. The lettering 1600 N; above or below the FIE label of quality the lettering EN13567 level2, and the CE mark should be mentioned. The label of quality should also be placed in the spring (« tongue ») that exists in the rear of the mask. A bigger label of quality in fabric can be sewed in the interior of the bib in a visible way. The letters M2009 must also figure in the spring of the new masks for foil, near the label of quality.

7. The manufacturers must answer any question that the SEMI will put to them!
8. Only masks with a valid CE test report from an FIE agreed institute( CRITT, Denkendorf, IFTH) that were tested according with the standard EN 13567, and received a conductive bib can have the FIE approval (*homologation*)!

The masks which are not simultaneously according with the FIE specifications, and the CE EN13567 standard cannot get an approval!

9. When using the wireless signalling system a plate of LEDs is placed on the sides of the masks, so ideally is recommend that the new designs of masks have the mesh free of any objects in order to make possible the installation of the LEDs plates and guarantee a good visibility of the LEDs when lighted.
10. After the analysis and inspection the documents and of the mask sample and bib sample provided by each manufacturer, he will receive the FIE's approval certificate (*the homologation*), which allows them to sell their foil masks with a conductive bib, the so called M2009 masks, with the FIE stamp, and only masks from the official list of masks with a conductive for foil will be accepted at the FIE's weapons control.

### **III FIE's Official list of Masks for foil with a conductive bib - M2009**

After getting an approval the Masks for Foil will be added to the FIE's Official list of Masks for foil with a conductive bib - M2009.

The list will be published starting from 15 October 2008, at the FIE's site [www.fie.ch](http://www.fie.ch) , menu FIE Official (*FIE Officiel*), sub-menu Rules (*Règlements*), This list it will be updated every time that a new mask from a manufacturer is approved by the FIE.

### **IV 2 Types of masks for foil with a conductive bib**

From the 1st January 2009 for Seniors at the FIE's competitions only 2 types of masks for foil are allowed:

- The standard metallic mesh mask with a conductive bib, which can be used at FIE World cups at all the stages of the competition; plus at FIE Grand Prix and World Championships until the end of tableau 64.
- The Transparent Visor masks with a conductive bib that can be used at all the competitions and at all stages of the competition, being mandatory at tableau 32 up to the finals (*from the tableau of 32 onwards*) at Grand Prix and World Championships.



## V The conductive bib

According with m.27.2 the outside part of the bib is conductive and starts 1,5 to 2 cm below the chin.

As an example consider the specific case of a conductive bib: to obtain the horizontal line, the manufactures are required to cut a piece of conductive fabric in a shape that after sewed to the bib covers the external lower area of the bib of their masks. This piece of fabric after applied to the masks (« sewed ») must guarantee that the centre vertical line of this conductive piece starts from 1,5 to 2 cm below the chin to the end of the bib and assures an horizontal line (see photo).

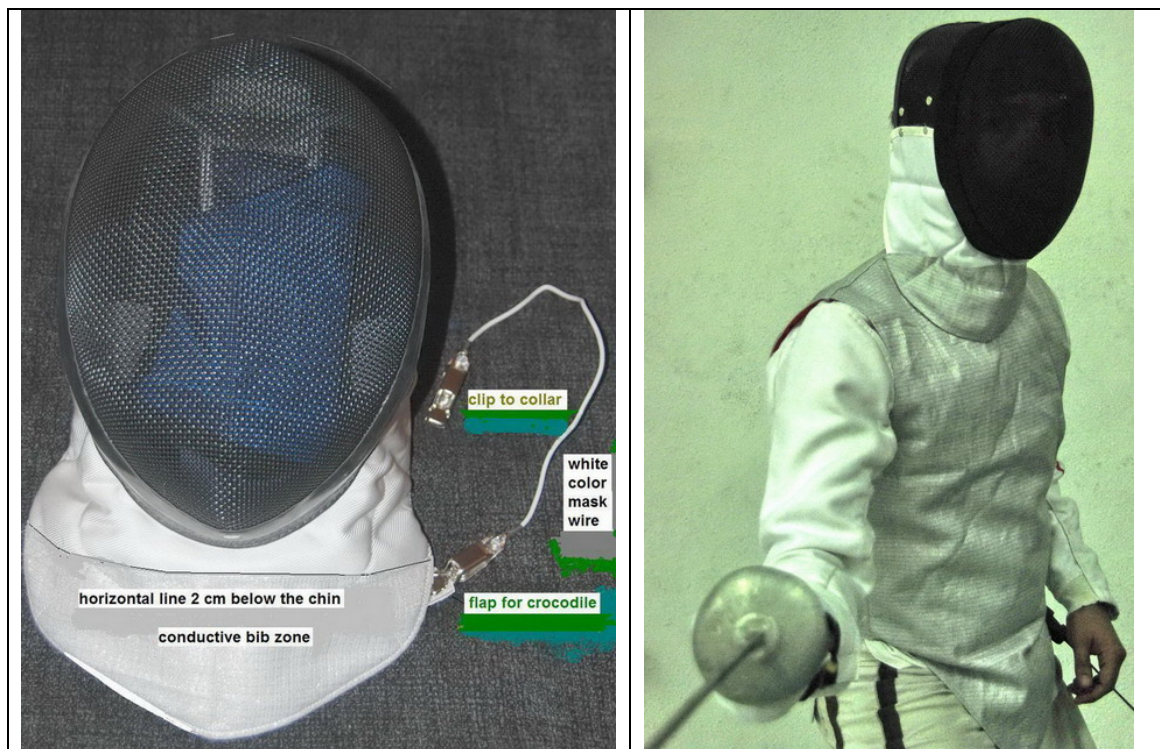
Manufacturers must consider that the cut of the top of the conductive piece of conductive material should be done in a curved way. Since, once applied to the mask's bib the curved top of the conductive piece curved will became a horizontal line.

The above described procedure applies to all foil masks and bibs.



Designs with a tolerance of a maximum of 1 cm making the horizontal line go up on the sides of the mask's bib, are accepted. But designs where the piece of conductive fabric provokes a falling horizontal line on the sides of the bib (and consequently a smaller valid target then the one specified by paragraph m.27.2) will not be approved.





## VI Means of connecting the valid bib to the electrical jacket

The connection of the valid bib area to the electrical jacket is to be made by a wire constituted by a single electrical isolated conductor cable with 2 crocodile clips.

The inner part of the bib will shall feature 2 flaps: each one with a length of 2,0cm x 1,0cm (tolerance of +0,5cm is accepted).

The flaps must be sewed and placed in each side of the bib symmetrically and laterally; they must be sewed against the interior of the conductive fabric in order to guarantee the conductivity. And also sewed in the interior border of the bib at a place that ends 1cm below the interior of the conductive fabric horizontal line, one end of the flap must be free in such a way that will not show when not in use, and will came out once the crocodile is connected (see photo below).



The crocodile clip of the mask wire will be attached to the flap on the “non sword arm” side of the fencer.



The flaps will be made of the same conductive material of the bib (or other conductive material), this solution will permit to sew new conductive fabric on top of the flaps (when a flap will be worn out).

## **VII Mask Wire for the foil mask with conductive bib and metallic crocodile clips**

The mask wires for the foil mask with conductive bib are similar to the ones used in sabre with the condition that all wires must be white !

This is a new system! And fencers will equip themselves with new mask wires, being greatly desirable that an effect of camouflage will be obtained. This is the reason why was taken the decision of only accept white mask wires at the weapon`s control at FIE foil competitions.

A mask wire can be of 3 types: with a length between 30 cm and a maximum of 40 cm plus the length of the 2 crocodile clips, being the cable with a single conductor (non curled) isolated electrical cable; or with a length of 25cm for a coiled cable (in the free position, meaning not stretched) plus the length of the 2 crocodile clips. Or of a mixed type like the one used (for sabre) in the last Olympics with a total of 30cm being 10 cm of straight cable followed by 10 cm of coiled cable (in the free position meaning not stretched) and followed again by 10 cm of straight cable, plus the length of the 2 crocodiles.

The use of telephonic cables is not allowed, since telephone cable tends to curl with use and extend more then the allowed 40 cm.

Besides the crocodile clips that are of silver or gold metal plated colour, tape or other material used in the mask wire has to be in white colour.

## **VIII Crocodile clips**

The metallic crocodile clips are defined in the rules paragraph m.29.c)

The crocodile clip must be robust and ensure perfect contact with the conductive jacket. Its width at the point of contact must be at least 10 mm; the inside of the clip must leave a free space at least 8 mm long by 3 mm high.

*La pince crocodile doit être d'un modèle fort et assurer un contact parfait avec la veste conductrice. La largeur à l'endroit du contact devra être au moins de 10 mm, l'intérieur de la pince devra présenter un espace libre d'au moins 8 mm de longueur et 3 mm de hauteur.*



In the specific case of foil and of a mask with a conductive bib, one crocodile clip must be clipped onto the back of the conductive jacket (ideally in a conductive flap placed at the center of the collar) ; and the other crocodile clip must be clipped always on the non sword-arm side and on the conductive flap that exists in the inner part of the conductive bib on the non sword-arm side (see next photo).

## **IX Other designs**

Other designs are possible after being proposed by the manufacturers and approved by the SEMI commission: such is the case of the mask wire directly connected to the inside of the bib, where the wire goes inside the mask up to the top of the mask and falls from the back of the neck to the conductive flap in the collar, in order to prevent contact with the skin both crocodiles have to be isolated with white plastic material, so this design still is under research and development and was not yet approved.

- The design of a mask with conductive fabric in the inside of the electric bib is not allowed!

This design can assure an electrical contact each time a touch would occur, but has the disadvantage that electrical isolation (in the case of fencers who sweat a lot) cannot be guaranteed; and also a foil point touching the interior of a bib would produce a hit, situation that is considered dangerous and undesirable.

- Another design of the mask with a conductive bib where the flaps are placed totally inside the bib in such a way that after the cable is installed the crocodile will not be visible, was abandoned for the moment since it requires the use of a mask wire with isolated crocodile connectors in order to not have problems with humid bibs.

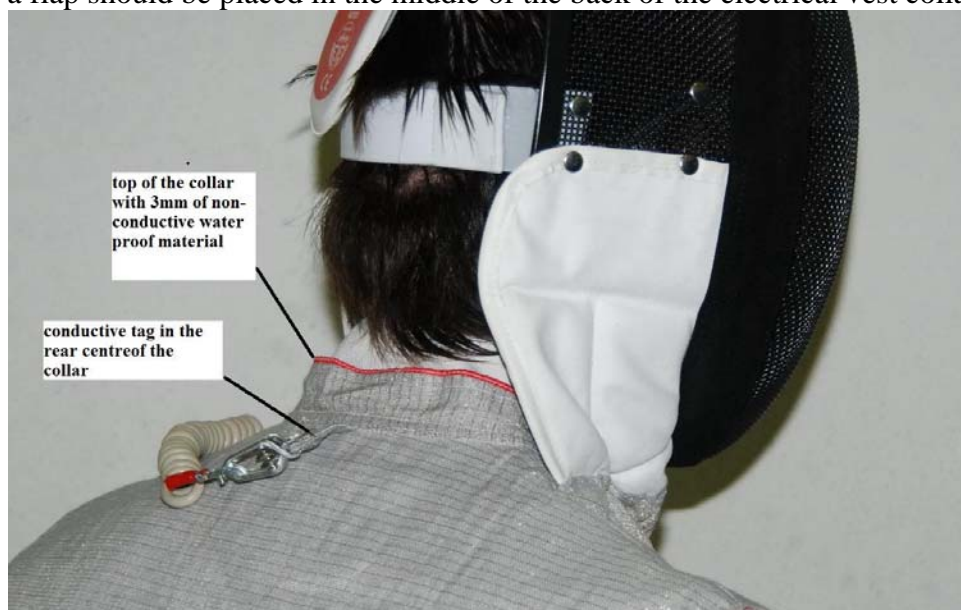
## **X Impermeability of the inside fabric of the mask**

In order to avoid electrical problems with the sweated conductive bibs or sweated electrical jackets, it's recommended to the manufacturers that they always use good quality and impermeable (water proof) fabrics in the inside of their masks and electrical jackets.

To avoid false touches due to sweat it is also recommended that the top of the electrical jacket's collar will be made with 3mm of non-conductive water proof fabric, of the same type of the one used on the inside of the jacket (see photo below).

## **XI Flap in the collar of the foil electrical jacket**

In order to attach the crocodile connector in one end of the mask wire to the electrical jacket a flap should be placed in the middle of the back of the electrical vest collar.



The FIE's SEMI commission is available masks to clarify any questions concerning the described information that the manufacturers of fencing might have, feel free to contact us at any time.

The SEMI is waiting the final version of the mask samples, the bib samples and the documents to deliver the FIE certificates of approval (homologations), and complete the list of masks for foil with a conductive bib.



## **XII National Competitions**

### **Transforming a mask, to become a mask with a conductive bib.**

The National Federations have the responsibility to decide by themselves concerning the use or not of foil masks with conducting bibs at their internal competitions!

The FIE approved masks can be used. Or the manufacturers can prepare a “Kit” that could easily be adapted to the existing masks, and propose an external bib with flaps that can be applied with glue, Velcro or be sewed to the existing masks bib, and consequently convert the existing masks to the new design in a cheaper way than buying new ones.

Proceeding this way a mask becomes a mask with a conductive bib.

However, this solution is not applicable to FIE foil competitions where only FIE approved masks mentioned in the list, with a conductive bib sewed and made by a manufacturer, are allowed.

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