भारतीय
मानक
Indian Standard

बॉक्सिंग दस्ताने — विशिष्टि

Boxing Gloves — Specification

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft was finalized by the Abrasives Sectional Committee and approved by the Production and General Engineering Division Council.

Boxing gloves are essential protective equipment used across training, sparring, amateur and professional competition. The design, materials, and performance of boxing gloves have evolved significantly since the original IS 3874:1987 specification. This revision brings the standard into conformity with modern materials science, design principles, international test methods, and the rules of leading boxing authorities.

a) IS 3874:1987 : Specification of Boxing Gloves (first revision)

For the purpose of determining compliance, numerical results shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values (second revision)'. The number of significant places retained in the rounded-off value shall be the same as that of the specified value.

Indian Standard

BOXING GLOVES — SPECIFICATION

1 SCOPE

This Standard prescribes requirements for boxing gloves intended for use in training, sparring and competitive boxing.

2 TERMINOLOGY

2.1 Outer Shell -The strong outer cover of the glove, usually made of leather or synthetic material.

2.2 Padding - The soft layers inside the glove that absorb force when you punch.

2.3 Wrist Strap - The part that wraps around your wrist to keep the glove tight and steady.

2.4 Thumb Lock - A small piece that keeps the thumb attached to the glove so it doesn't bend the wrong way.

2.5 Lining - The inner cloth of the glove that touches your hand and keeps it dry and comfortable.

3 CLASSIFICATION

3.1 Boxing gloves shall be classified by intended use and weight category:

a) Training Gloves — Recommended for bag work and fitness (typically 12–18 oz / 340–510 g)
b) Sparring Gloves — Recommended for partner drills and practice sessions (typically 14–16 oz / 397–454 g)
c) Professional Competition Gloves — Recommended for pro fights (lace-up or Velcro). They usually weigh 8 oz (~227 g) for fighters up to 147 lb and 10 oz (~283 g) for heavier fighters (WBC/WBO weight rules)
d) Kid / Youth / Exhibition Gloves — Recommended for youth or exhibition use (lighter than 8 oz / 227 g)

4 REQUIREMENTS

4.1 Materials

4.1.1 *Shell*

The outer shell shall be made of either

Natural Leather — Top-grain leather, 0.5–1.1 mm thickness, Smooth Finish.

Synthetic Leather — PU, PVC, or Microfiber; abrasion-resistant, equivalent thickness to natural leather.

4.1.2 *Padding*

a. Handcrafted Multilayer Foam — Padding shall consist of high-density closed-cell foam in 2-5 laminated layers, evenly distributed over the knuckles, back of the hand, and thumb. All layers shall be dedicated to shock-absorbing foam.

b. Molded Foam — Padding shall consist of high-density closed-cell foam in a single-piece construction (no laminated layers), evenly distributed over the knuckles, back of the hand, and thumb. All material shall be dedicated to shock-absorbing foam.

4.1.3 *Lining*

The inner lining shall be made of breathable, moisture-wicking textile such as polyester, or polyamide, with a pH value between 3.5 and 9.5. The lining shall be designed to prevent slippage during use.

4.1.4 *Thread*

All stitching shall be done using high-tensile polyester or polyamide core-spun thread. The thread shall have a minimum single-thread breaking load of 25 N.

4.2 Closures

4.2.1 *Lace-up closure*

Gloves using lace-up designs shall include eyeholes with lacing covering 10–15 cm of the wrist area.

4.2.2 *Hook-and-loop (Velcro) closure*

Gloves using Velcro shall have straps at least 10 cm wide, and the closure system shall withstand a minimum of 2,000 fastening/unfastening cycles.

4.3 Surface Inks & Dyes

All inks and dyes used for markings or logos on the glove shall be non-toxic, abrasion-resistant, and compliant with applicable IS/ISO safety regulations.

5 MANUFACTURING AND WORKMANSHIP

5.1 Construction Methods

a) Hybrid Stitching — Machine sewn with hand-finished detailing for enhanced durability and precision.

5.1.1 The glove shall be constructed from appropriately shaped panels — back, palm, and wrist strap each from one piece, and thumb from two — with 2–5 layers of high-density foam evenly inserted over the knuckles, back of hand, and thumb; all seams machine-stitched with 3–4 stitches/cm; and fastened by either lace-up eyeholes spaced over 10–15 cm of the wrist or hook-and-loop straps at least 4 cm wide.

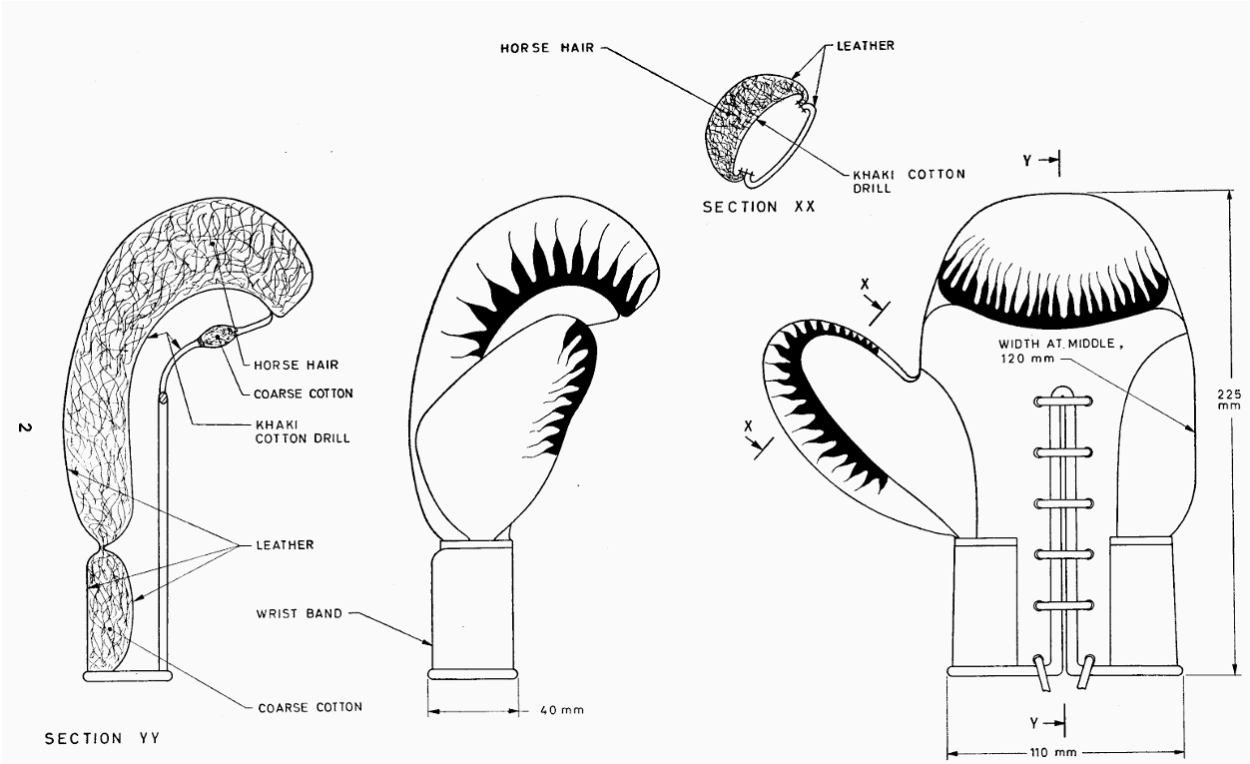

FIG. 1 BOXING GLOVES, LACED TYPE

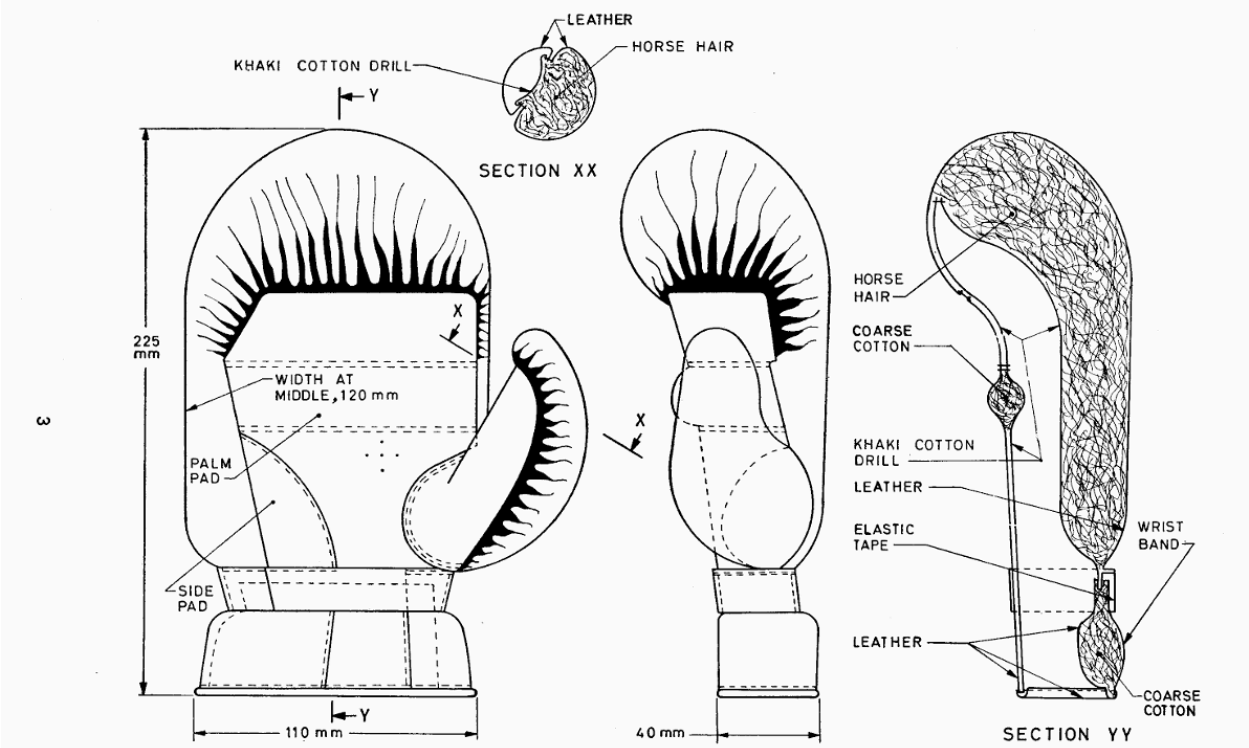

FIG. 2 BOXING GLOVES. ELASTIC-BAND TYPE

These two are valid for professional Gloves only

6 PERFORMANCE TEST

6.3 Seam Strength Test

This test evaluates the tensile strength of glove seams to ensure structural integrity under repetitive stress. A tensile load of up to 200 N is applied on each major seam (back, palm, and wrist strap areas) using a Universal Testing Machine (UTM) in accordance with ISO 13935-2:2014 (Textiles Seam tensile properties Determination of maximum force to seam rupture using the grab method).

Test direction: Along the seam, perpendicular to stitching
Pass criteria: No seam rupture, opening, or padding exposure
Significance: Ensures gloves do not split or lose padding under punching/flexing

6.4 Leather Tensile Strength and Stretch Test (Raw Material Test)

To ensure durability and deformation resistance of the leather (natural or synthetic), raw material samples shall be tested using a Universal Testing Machine (UTM) per ISO 3376:2020 (Leather — Physical and mechanical tests — Determination of tensile strength and percentage extension).

Procedure:

- Specimens cut along machine direction (lengthwise) and cross direction (widthwise)
- Tensile force applied until failure
- Measured parameters:
    - Tensile strength (N/mm²)
    - Elongation at break (%)

Pass criteria (to be defined as per glove grade/spec)

- Minimum tensile strength and stretch percentage depending on usage type (training, competition)

6.4 Material & Chemical Safety Tests

6.4.1 *Material Safety*

pH Test: Applies to shell leather and textile lining; pH must be between 3.5 and 9.5 as per Applies to both shell leather and textile lining materials.
The pH value of aqueous extracts must lie between 3.5 and 9.5, ensuring the material is neither too acidic nor too alkaline, which could cause skin irritation or degrade material quality.

- Test Standards:
    - ISO 4045 *(for leather)*
    - ISO 3071 *(for textiles)*

Table 1 Requirements for Boxing Gloves

To establish a standardized sizing chart for boxing gloves across three levels—A (Professional Competition), B (Training/Sparring), and C (Kids) .

Sl No.	Size	Requirements	Level 1	Level 2	Level 3
(1)	(2)		(4)	(5)	(6)

i)	glove size	8 - 10 oz	12 -16 oz	4-6 oz
ii)	Hand Circumference, cm	17-23	21-27	15-19
iii)	Glove weight ,g	225–340	340–510	113–226
iv)	Glove length ,cm	28–30	30-33	24-28

7 PACKING AND MARKING

7.1 Packing

The boxing gloves shall be kept in pairs (left + right), palm to palm, tip to wrist, and packed accordingly.

7.2 Marking

7.2.1 Each glove—or its immediate packaging—shall be indelibly marked with:

i. Manufacturer's name, initials, or trade-mark

ii. Glove size (oz) and Level (1/2/3)

iii. Month and year of manufacture

7.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the standard mark.