



**PLANT STANDARD
HYDERABAD**

HY7780575

Rev. No. 00

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LOW ANKLE SAFETY SHOES WITH LACE (PU SOLE – STEEL TOE)

1.0 SCOPE

This standard covers the requirement of Low Ankle Safety Shoes – Polyurethane (PU) sole with Steel Toe & Lace to protect the feet and ankle in heavy engineering industry.

2.0 COMPLIANCE WITH STANDARDS

- a) Upper of the shoe shall conform to IS: 5677 – 1986 Reaffirmed 1997.
- b) Bottom shall be good quality of PU to IS: 15298 – 2004.
- c) Inner toe tongue side lining 1.5 mm – IS: 3840 – 1996 Reaffirmed 2002.
- d) Insole –IS-3840 – 1996 Reaffirmed 2002.
- e) Carbon steel toe cap IS: 5852 – 2004.
- f) Corporate Standard PPE'S Specification Manual 2012.
 - Authenticated photo copies of the latest test certificates from OEMs, National Accredited Test Laboratories to be submitted along with the offer.
 - Vendor/bidder to furnish authorization letter from Principle/OEM against the enquiry quoted.
 - Vendor/bidder to submit along with the offer, authenticated copy of latest certificate of product conformity to relevant IS/EN/ANSI standards.
 - For each PPE specification, the vendor/bidder shall confirm their acceptance to the BHEL specification by signing and stamping on it.

3.0 TECHNICAL REQUIREMENTS

- a) The boot upper and bottom sole shall be joined together by direct injection process.
- b) Upper leather shall be good quality chrome tanned plain grain Cow / Buffalo leather 1.5mm +/-0.1 mm thickness Brown / Black in colour.

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- c) The shoe shall be provided with lasting inner sole to the thickness of 3mm+/-0.2 mm (Leather / leather board)
- d) Vegetable Tanned soft Grain Leather, shall be used for insole (Sock lining) toe lining and side, tongue inner lining to the thickness of 1 mm. Natural yellow in colour.
- e) The Eye lets shall be of Brass/Aluminum 3 numbers .inner dia 6mm, outer dia 12mm.
- f) The shore hardness of the bottom sole shall be 55 to 65 A.
- g) The shoes are to be machine-stitched and no Nails shall be used.
- h) Total weight shall not be exceeding 1000 grams for Size 8 pair. The weight can be increased or decreased by 50 gms for higher or lower sizes.
- i) It shall be provided with cotton lace of 6mm width and 630mm length.
- j) The Safety Shoes shall be designed and manufactured as per drawing given in Page # 3.

4.0 SAMPLE

Free sample shall be supplied along with offer for evaluation and approval.

5.0 TEST CERTIFICATE

5.1 Suppliers shall submit the test certificates along with the bulk supply.

- a) Leather quality
- b) Heat resistance
- c) Impact resistance
- d) Penetration resistance
- e) Electrical resistance
- f) Oil and chemical resistance

5.2 Test Certificate shall also indicate Batch No. & date

6.0 PACKING

The shoes shall be packed in good quality card board box with Two Pairs of Cotton Lace and polythene carry bag.

7.0 MARKING

The shoe shall be marked with the following information

- a) Size of the shoe
- b) BHEL logo
- c) ISI/EN/ANSI marks
- d) Suppliers identity
- e) Batch, Month and the year of the manufacturing.

8.0 INSPECTION

Inspection will be carried out at supplier's works with reference to the approved sample and test reports.

9.0 GUARANTEE CERTIFICATE

Guarantee Certificate to be given for any manufacturing defects along with its consignment from the date of receipt at stores for free replacement with in Twelve months.

10.0 ENQUIRY SPECIFICATION

The Enquiry shall also have the copy of the specification as "Low Ankle Safety Shoes with Lace (PU) sole" as per BHEL standard.



Fig: Safety Shoes-PU Sole with Lace.



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LOW ANKLE CASUAL/CUT SHOE (SLIP- IN TYPE)

1.0 GENERAL:

This standard covers the requirements of Low Ankle Casual / Cut shoes (Slip-in Type) Polyurethane Sole (PU).

2.0 APPLICATION:

This shoe is meant for wearing in workshop areas in general.

3.0 COMPLIANCE WITH NATIONAL STANDARD AND QUALITY REQUIREMENTS:

- 3.1 The low ankle casual shoe shall be oil resistant PU sole conforming to IS 15298 Durby design.
- 3.2 Shoe upper leather shall be made of good quality grain leather (cow or buffalo) black in colour thickness 1.5 mm conforming to IS 5677. Material test certificate from Govt. laboratory to be submitted.
- 3.3 **Insole material:** Shoe shall be provided with lasting inner sole to the thickness of 3 mm.
- 3.4 **Lining material:** Vegetable tanned soft grain leather conforming to IS 3840 type 1 or type 3 inner sole (sock lining). The lining and side tongue inner lining to be of thickness of 1 mm.
- 3.5 **Toe cap:** The shoe should be provided with carbon steel toe cap conforming to IS 5852 and to be painted to avoid corrosion. Toe cap should withstand an impact of 14 kgm. Test certificate to be submitted from Govt. laboratory.
- 3.6 The shoe upper and bottom shall be joined together by direct injection process.
- 3.7 The shoe upper and bottom shall withstand adhesion test (27 kg at toe and 35 kg at heel).
- 3.8 The shoe upper shall be provided with folded type cushion arrangement.
- 3.9 The shoe shall be provided with four number of brass or aluminium eyelets having inner dia 6 mm and outer dia 12 mm.
- 3.10 No nails should be found in shoes.

Revisions: Title, cl. 1.0, 4.0, 5.1 and 5.2 modified.

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- 3.11 The ankle height shall be 63 mm.
- 3.12 The dimensions of the shoe shall be as per Table 1 of IS 1638.
- 3.13 Total weight of the shoe, per pair of size 8 shall not exceed 800 gms. The mass of such shoes shall increase or decrease by 50 gms per pair for bigger and smaller sizes respectively.
- 3.14 Each pair of shoes shall be embossed with trade mark, month and year of manufacture, batch no. and English sizes as per Table 10 of IS 1638.

4.0 PACKING AND MARKING:

Each pair of shoe shall be packed in a polythene cover and supplied in good cardboard box indicating English size of shoe with a polythene carry bag.

5.0 TEST CERTIFICATES:

- 5.1 Inspection will be carried out at supplier's works by BHEL representative with reference to approved sample and relevant Indian Standard (IS).
- 5.2 A shoe pair (free sample) along with test certificates to be submitted for our evaluation and approval with offer.
- 5.3 BHEL order no.
- 5.4 Plant specification no.
- 5.5 Batch no.
- 5.6 Identification mark/no.
- 5.7 Supplier's reference and name.

- 6.0** Free replacement shall be given by supplier for any manufacturing defects within 12 months from the date of receipt of material at our works.



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LOW ANKLE ELECTRICIAN SHOE WITH LACE (WITHOUT STEEL TOE)

1.0 GENERAL:

This standard covers the requirement of Low Ankle Safety Shoes – Polyurethane (PU) sole with lace and without steel toe for electricians.

2.0 COMPLIANCE WITH STANDARDS:

- 2.1 Upper of the shoe shall conform to IS 5677-1986.
- 2.2 Bottom of the shoe shall be good quality of polyurethane conforming to IS 15298-2002.
- 2.3 Inner toe tongue side lining shall be 1.5 mm and shall conform to IS 3840-1996. Insole of shoe shall also conform to IS 3840-1996.

3.0 TECHNICAL AND QUALITY REQUIREMENTS:

- 3.1 The shoe upper and bottom sole shall be joined together by direct injection process.
- 3.2 Upper leather should be good quality cow or buffalo leather having 1.5 mm thickness and shall be black / brown in colour.
- 3.3 The shoe shall be provided with an inner sole of 3 mm thickness made of leather or leather box and should be long lasting.
- 3.4 Eyelets shall be made of brass or other non-conducting material of inner diameter 6 mm and outer diameter 12 mm.
- 3.5 The shore hardness of the shoe shall be 55 to 65A.
- 3.6 No nails should be used in the manufacture of the shoe.
- 3.7 Total weight of the shoe shall not exceed 950 grams/pair for size 8. The weight can increase or decrease by 50 gms for higher or lower size.
- 3.8 Shoe shall be provided with a cotton lace of 6 mm width and 630 mm length.
- 3.9 The design and manufacture shall be as per IS 15298 Part 2 - 2002 figure 1.
- 3.10 Toe portion of the shoe should be provided with hard packing of fibre/PVC.

Revisions: Cl. 1.0, 3.4, 3.7, 5.1, 6.0, 6.1 and 7.0 modified. Cl. 3.10 added.

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3.10 The shoe sole shall have to withstand 30 KV (rms) for 1 minute. Test certificate from govt. lab to be submitted.

4.0 TEST CERTIFICATES:

4.1 Supplier shall submit following test certificates along with bulk supply.

- a) Leather quality.
- b) Abrasion resistance.
- c) Oil resistance.
- d) Electrical resistance.
- e) Penetration resistance.

4.2 Test certificate shall indicate

- a) BHEL P.O. number.
- b) Batch number and date.

5.0 PACKING AND MARKING:

5.1 The shoes shall be packed in good cardboard boxes to prevent damage during transit and provided with polythene carry bag.

5.2 The cardboard box shall also have two pairs of spare laces.

5.3 The shoe shall be marked with the following information.

- a. Size of the shoe.
- b. BHEL logo.
- c. Supplier's name and reference.
- d. BHEL order no.
- e. Batch, month & year of manufacture.

6.0 Supplier shall submit free sample for technical evaluation and approval.

6.1 Inspection will be carried out at Supplier's works with reference to the approved sample and IS 15298-Part-2-2002 and test reports of government laboratories.

7.0 **Guarantee certificate:** Supplier shall give a guarantee certificate to replace the shoes with manufacturing defects within Twelve months of supply.



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HIGH ANKLE WELDER SHOES SLIP IN TYPE

1.0 GENERAL:

This standard covers the requirements of slip in type High Ankle Welder Shoes (Slip-in Type).

2.0 APPLICATION:

All types of welding.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

3.1 The sole of the shoe shall be heat resistant made of nitrile material.

3.2 Shoe upper leather shall be made of good quality grain leather (cow or buffalo) black in colour. Ankle height shall be 6" (150 mm) with inside zip, thickness 1.5 mm conforming to IS 5677. Arrangement for closing and opening with flap over zip with full length slip in type fixed with welcrow tape to cover zip. Material test certificate from government laboratory to be submitted along with sample and supplies.

4.0 TECHNICAL AND QUALITY REQUIREMENTS:

4.1 The bottom sole shall be provided with good quality Nitrile PVC blend sole-properties conforming to Table 1 of IS 14544 with antiskid design to withstand temperatures of 160° centigrade. Material test certificates to be submitted for sole from Govt. laboratory.

4.2 Insole material: Shoe shall be provided with lasting inner sole of a thickness of 3 mm.

4.3 Lining material: Vegetable tanned soft grain leather conforming to IS 3840 type 1 or type 3 inner sole (socks lining). Toe lining and side tongue - inner lining to be of the thickness of 1 mm.

4.4 Toe cap: The shoe should be provided with carbon steel toe cap conforming to IS 5852 and to be painted to avoid corrosion, and to withstand a force of 14 kgm. Test certificate to be submitted from Govt. laboratory

4.5 The shoe upper and bottom sole shall be joined together by direct injection process.

4.6 The shoe upper and bottom sole shall withstand adhesion test (27 kg at toe and 33 kg at heel) as per 5.7.2 of IS 14544.

Revisions: Cl. 4.11, 4.12, 5.3, 5.4 and 6.1 modified.

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- 4.7 The shoe upper shall be provided with folded type cushion arrangement.
- 4.8 No nails shall be found in shoes.
- 4.9 The dimension of the shoe shall be as per Table 1 of IS 1638.
- 4.10 Total weight of the shoe shall not exceed 1400 gms per pair of size 8. The mass of such shoes shall increase or decrease by 100 gms per pair for bigger or smaller sizes respectively.
- 4.11 Free replacement shall be given by supplier for any manufacturing defects within Twelve months from the date of receipt of material.
- 4.12 Inspection will be carried out at supplier's works by BHEL representative with reference to the approved sample and relevant Indian Standards (IS).

5.0 PACKING AND MARKING:

- 5.1 Each shoe shall be marked with BHEL emblem.
- 5.2 Each pair of shoe shall be embossed with trade mark, month and year of manufacture, batch no. and size (English) as per Table 10 of IS 1638.
- 5.3 Each pair of shoe shall be packed and supplied in good cardboard box indicating English size of shoe and a polythene carry bag.
- 5.4 A shoe pair (Free sample) to be submitted along with test certificates for our evaluation and approval with offer.

6.0 TEST CERTIFICATES:

- 6.1 Inspection will be carried out at supplier's works by BHEL representative with reference to approved sample and relevant Indian Standard (IS).
- 6.2 BHEL order number.
- 6.3 Plant specification number.
- 6.4 Batch no.
- 6.5 Identification mark/number.
- 6.6 Supplier's reference and name.



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LADIES' (BELLY TYPE/SLIP-IN) SHOES

1.0 GENERAL:

This standard deals with ladies belly type/slip-in safety shoe with polyurethane sole.

2.0 TECHNICAL & QUALITY REQUIREMENTS:

- 2.1 Shoe upper shall be made of good quality grain leather and black in colour. Ankle height shall be 62 mm and thickness 1.5 mm. The shoe upper should conform to IS 5677-1986. For shoe upper material test certificate from government laboratory should be submitted along with sample and suppliers.
- 2.2 Toe portion of the shoe should be provided with hard packing of fibre/PVC.
- 2.3 The bottom sole of the shoe shall be provided with good quality polyurethane sole, shore hardness 55 to 65 A with anti-skid design. Material test certificate to be submitted for sole from government laboratory.
- 2.4 Shoe shall be of belly type with strap and buckle for fitting.
- 2.5 **Insole material:** Shoe shall be provided with lasting inner sole to the thickness of 3 mm.
- 2.6 **Lining material:** Vegetable tanned soft grain leather should conform to IS 3840-1996. Toe lining and side tongue inner lining should be of thickness 1 mm.
- 2.7 The shoe upper and bottom sole shall be joined together by direct injection process.
- 2.8 The shoe upper and sole after joining should withstand adhesion test (27 kg at toe and 35 kg at heel).
- 2.9 The shoe upper shall be provided with folded type cushion arrangement.
- 2.10 No nails should be used in the manufacture of shoe.
- 2.11 The dimensions of the shoe shall be as per IS 1638-1969.
- 2.12 Each part of ladies shoe shall be embossed with trade mark, month, year of manufacture, batch no. and size (English).

Revisions: Title, cl. 2.2, 2.14, 2.15 and 4.1 modified.

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2.13 Shoe shall be marked with BHEL emblem.

2.14 Inspection shall be carried out at supplier's works by BHEL's representative with reference to the approved sample and relevant Indian Standard (IS).

2.15 Free sample shall be submitted for technical evaluation and approval.

3.0 Supplier shall submit the following information at the time of supply.

- a) BHEL order no.
- b) Plant standard no. HY7780569
- c) Batch no.
- d) Identification mark/no.
- e) Supplier's name & reference no.

4.0 PACKING AND MARKING:

4.1 Each pair of shoes shall be packed in good polythene cover and cardboard box indicating English size of shoe with a polythene carry bag.

5.0 WARRANTY:

Free replacement shall be given by supplier if any manufacturing defect is found within Twelve months of supply.



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NYLON SOCKS FOR WOMEN

1.0 GENERAL:

This standard deals with nylon socks for women employees.

2.0 QUALITY REQUIREMENTS:

2.1 The socks shall be made up of 100% nylon material.

2.2 They shall be supplied in Brown or Blue in colour.

2.3 The socks shall conform to IS-5084-1990.

2.4 The socks shall be free from any noticeable manufacturing defects.

2.5 The heel-sole and toe portion of socks should be knitted in plain stitches with splicing. The splicing should be uniform throughout and spliced portion free from creases and folds.

2.6 The socks shall be free size reversible double wear upper folded, double cylinder.

2.7 The socks' dimensions shall be palm length 23.6 cms and upper portion 24 inches.

2.8 Free Sample shall be submitted for evaluation and approval.

2.9 Inspection shall be carried out at supplier's works by BHEL's representative with reference to approved sample and relevant standard

3.0 Supplier shall submit the following information at the time of supply.

- a) BHEL order no.
- b) Plant standard no. HY7880964
- c) Batch no.
- d) Identification mark/no.
- e) Supplier's reference and name.

4.0 PACKING AND MARKING:

Nylon socks shall be suitably packed in polythene cover to prevent damage during transit. Each pack shall be legibly marked with following information.

- a) BHEL order no.
- b) Batch no.
- c) Identification mark/no.
- d) Supplier's name and reference

Revisions: Title, Cl. 1.0 and 2.2 modified.
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NYLON SOCKS

1.0 GENERAL:

This standard deals with nylon socks used by male employees.

2.0 QUALITY REQUIREMENTS:

2.1 The socks shall be made of 100% nylon material.

2.2 They shall be supplied in Brown or Blue in colour.

2.3 The socks shall conform to IS 5084-1990.

2.4 The socks shall be free from any noticeable manufacturing defects.

2.5 The heel-sole and toe portions of socks should be knitted in plain stitches with splicing. The splicing should be uniform throughout and spliced portion free from creases and folds.

2.6 The socks shall be free size reversible double wear upper folded and double cylinder.

2.7 The socks' dimension shall be palm length 23 cms and upper portion 28 cms.

2.8 The upper end portion of the socks should have good elasticity for grip.

2.9 Free Sample are shall be submitted for our evaluation and approval.

2.10 Inspection shall be carried out at supplier's works by BHEL's representative with reference to approved sample and relevant standard.

3.0 Supplier shall submit the following information at the time of supply.

- a) BHEL order no.
- b) Plant standard no. HY7780964
- c) Batch no.
- d) Identification mark / no.
- e) Supplier's reference and name

Revisions: Cl. 2.2, 2.10 and 4.0 modified.

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4.0 PACKING AND MARKING:

Nylon socks shall be suitably packed in polythene cover to prevent damage during transit.

Each pack shall be legibly marked with following information.

- a. BHEL order no.
- b. Plant standard no. HY7780964.
- c. Batch no.
- d. Identification mark / no.
- e. Supplier's name and reference.

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