1.0 Scope

This standard covers the requirement of Safety Shoes (PU sole) to protect the feet and ankle in heavy engineering industry.

2.0 Conformance with Standards

2. Bottom shall be good quality of PU to IS-15298 – 2004

3.0 Technical Requirement

1. The boot upper and bottom sole shall be joined together by direct injection process.
2. Upper leather shall be good quality chrome tanned plain grain Cow / Buffalo leather 1.5mm thickness Brown / Black in colour.
3. The shoe shall be provided with lasting inner sole to the thickness of 3mm (Leather / leather board).
4. 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.
5. The Eyelets shall be of Brass/Aluminum 3 numbers, inner dia 6mm, outer dia 12mm.
6. The shore harness of the bottom sole shall be 55 to 65 A.
7. The shoes are to be machine-stitched and no Nails shall be used shall be Free from nails.
8. Total weight shall not be exceeding 950 grams for pair.
9. It shall be provided with 6mm widths and 630mm length, cotton lace.
10. Construction, measurement shall be as per our drawing.
4.0 Sample
Sample shall be supplied along with offer for approval only for first time supplier and supplies made after 3 years.

5.0 TEST CERTIFICATE:

5.1 Suppliers shall submit the test certificates along with the bulk suppl'.
- 1. Leather quality
- 2. Heat resistance
- 3. Impact resistance
- 4. Penetration resistance
- 5. Electrical resistance
- 6. Oil and chemical resistance

5.2 Test Certificate shall also indicate the following
   a) BHEL PO.No.
   b) Batch No. & date

6.0 PACKING:
The shoes shall be supplied, packed in good quality card board box with Two Pairs Of Cotton Lace As Spare.

7.0 MARKING:
The shoe shall be marked with the following information
   a) Size of the shoe,
   b) BHEL logo
   c) Suppliers identity
   d) Batch, Month and the year of the manufacturing.

8.0 Inspection
Inspection will be carried out at our works with reference to the acceptable sample and test reports. BHEL will inspect at works wherever required.

9.0 GUARANTEE CERTIFICATE:
Guarantee Certificate to be given for any manufacturing defects along with its consignment from the date of receipts at stores for free replacement with in six month.

10.0 Enquiry specification
The PI and Enquiry shall also have the copy of the specification as “Asbestos Safety Boot” as per BHEL Corporate standard size.
SAFETY SHOES (PU SOLE)
1.0 GENERAL:

This standard covers the requirement of safety shoes with polyurethane sole for electricians.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Upper of the shoes shall conform to IS 5677-1986.

2.2 Bottom of the shoes shall be good quality of polyurathene conforming to IS 15298-2002.

2.3 Inner tongue side lining shall be 1.5 mm and shall conform to IS 3840-1996. Insole of shoes shall also conform to IS 3840-1996.

3.0 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 aluminium of inner diameter 6 mm and outer diameter 12 mm.

3.5 The shoe 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.

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.
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.

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 to give samples for inspection before bulk supply.

6.1 Inspection will be carried out at Ex-works with reference to 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 24 months of supply.
1.0 GENERAL:

This standard covers the requirements of slip in type high ankle welder shoes.

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 The 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 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.
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 3 months from the date of receipt of material.

4.12 Inspection will be carried out at supplier's works by BHEL representative.

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 cover.

5.4 A shoe pair (Free sample) to be submitted along with test certificates for our evaluation and approval with offer before proceeding for bulk manufacture.

6.0 TEST CERTIFICATES:

6.1 Pre-inspection will be carried out at supplier's works by BHEL representative sample before bulk manufacture.

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.
LADIES' (BELLY TYPE) SHOES

1.0 GENERAL:
This standard deals with ladies belly type safety shoe with polyurethane sole.

2.0 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.

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 3840-1966. 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).
2.13 Shoe shall be marked with BHEL emblem.

2.14 Inspection shall be carried out at supplier’s works by BHEL’s representative.

2.15 Sample is required for our evaluation before bulk manufacture.

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.
   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.

5.0 WARRANTY:

Free replacement shall be given by supplier if any manufacturing defect is found within six months of supply.
LOW ANKLE CASUAL SHOE

1.0 GENERAL:

This standard covers the requirements of low ankle casual shoes (Polyurathene sole).

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:

Issued:

STANDARDS ENGINEERING DEPARTMENT

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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 shoes shall be packed in a polythene cover and supplied in good cardboard box indicating English size of shoe.

5.0 TEST CERTIFICATES:

5.1 Pre-inspection will be carried out at supplier's works by BHEL representative sample before bulk manufacture.

5.2 A shoe pair (free sample) of each size 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 9 months from the date of receipt of material at our works.
NYLON SOCKS

1.0 GENERAL:

This standard deals with nylon socks used by workmen.

2.0 QUALITY REQUIREMENTS:

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

2.2 They shall be brown or navy 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 Samples are required for our evaluation and approval.

2.10 Inspection shall be carried out at supplier's works by BHEL's representative.

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
4.0 PACKING AND MARKING:

Nylon socks shall be suitably packed 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.
NYLON SOCKS FOR LADIES

1.0 GENERAL:

This standard deals with nylon socks for ladies' workwomen.

2.0 QUALITY REQUIREMENTS:

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

2.2 They shall be brown or navy 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 Samples are required for our evaluation before bulk manufacture.

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 to prevent damage during transit. Each pack shall be legibly marked with following information,
a) BHEL order no.
b) Plant standard no. HY7880964
c) Batch no.
d) Identification mark/no.
e) Supplier's name and reference