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TECHNICAL SPECIFICATIONS FOR "FIBREFORM MOULDINGS" BRAND MINESTEP
TYPE HEAVY DUTY FIBREGLASS (C.R.P.) STEP LADDERS.
MAXIMUM RATED CAPACITY 136KG.

SCOPE

This specification details the materials, method of construction and quality control measures applicable.

REQUIREMENTS TO BE SPECIFIED BY PURCHASER..

1. Title, reference number, issue and date of this specification.
2. Type of ladder i.e. step ladder or double sided step ladder.
3. Nominal height.

MATERIALS

All structural components, with the exception of the top cap, shall be of pultruded G.R.P. sections of the Following cross sectional dimensions:-

1. Stiles – 84mm x 30mm x 5mm channel.
2. Back frame – 48 mm x 28mm x 4.5mm channel.
3. Back frame bracing – 38mm x 28mm x 3mm channel.
4. Treads – 77mm x 25mm x 3mm with ribbed surface.
5. Treads – gussets – minimum 25mm x 3mm flat.
6. Top cap – to be of contact moulded G.R.P.. double moulded to ensure accurate fitment to top of styles.

METAL COMPONENTS.

1. Rivets and back up washers – electroplated or cadmium coated steel.
2. Bolts, nuts, pivot rod and washers – electroplated or cadmium coated steel.
3. Pivot bushings and shoulder nuts shall be of mild steel painted or electro plated.
4. Stays, stay brackets and feet caps shall be of steel – painted or electro plated.
5. No aluminium or aluminium alloy components shall be fitted whatsoever.

OTHER COMPONENTS

1. Ladder feet – shall be of a non slip material i.e. rubber.

METHOD OF CONSTRUCTION

Step and double sided ladders shall be assembled using hollow section blind rivets.

2.

With the exception of the pivot rod assembly lock nuts, all nuts should be of the nylock type. Pivot rod assembly shall be fitted with standard lock nuts against the shoulder nuts.

Both the stile and back frame feet shall be fitted with steel protection caps, bolted through the feet and riveted to the relevant sections.

Stays on ladders up to 3.6m in height, shall be fitted into the stile and back frame with load spreading steel brackets.

Each tread shall be supported by four gussets.

The top cap shall be fitted to the top of the stiles by means of six steel rivets. The back frame or second side of a double sided step ladder, shall be secured by means of an electro plated pivot rod which must be extended the entire width of the top cap. This pivot rod shall be 6mm diameter and have shoulder nuts with a bearing diameter of at least 9mm fitted to the ends.

Steel bearing plates should be fitted to pultruded G.R.P. pivoting areas to ensure that these sections are not submitted to any bearing stress.

The manufacture of all step ladders up to 3.6m high shall comply with SABS 1304 – 1980 standard for light ladders.

PULTRUSION SPECIFICATIONS.

All pultrusions shall be of a fully cured unsaturated thermosetting isophalic resin which is reinforced with glass fibres, and has additives which provide protection against ultra violet radiation.

The glass to resin ratio shall not be less than 55% glass to 45% resin.

TOP CAP SPECIFICATIONS

The top cap shall be manufactured using a fully cured flame retardant orthophalic resin, reinforced with glass chopped strand mat and woven rovings.

The glass to resin ratio shall not be less than 35% glass to 65% resin by weight.

Top cap shall be red or orange in colour. The top uppermost tread adjacent the top cap shall also be red or orange in colour to indicate areas of ladder which are unsafe to stand or sit on.

QUALITY CONTROL.

The manufacturer will randomly draw a sample ladder from the production facility after every seventy five ladders of a particular size has been manufactured. This ladder will be subjected to non destructive tests as per S.A.B.S. 1304 - 1980.

In addition a sample of all pultrusions in the batch used in the manufacture of the sample ladder should be subjected to "burn off" tests as follows:-

1. A sample portion of each pultrusion is weighed and mass noted.
2. This sample is then "burned" in a suitable kiln until all resin has burned off.
3. The resultant glass content is then weighed, and the resultant glass to resin ratio checked against Standards.
4. In addition – die-electric tests shall be carried out by the pultrusion manufacturer from time to time to Ensure a minimum die-electric strength of at least 35kv. Per 120mm length.
5. Test results must be recorded by the manufacturer, and these must be made available to the purchaser If required..

SPECIFICATION CONCLUDED.