FERROLIT

E 510

Technical Instruction Sheet

Characteristics:

FERROLIT 510 is a gel-like, two-component adhesive, is free of solvents, is based on epoxy resins and has a cycloaliphatic polyamine hardener.
The product is characterised by the following properties:

- it has a very neutral colour
- hardly yellowing
- because of it's gel-like consistency it has a high creep strength
- during hardening there is very little shrinkage, and therefore minimal tension within the adhesive joint
- the bonding are very weather resistant
- the adhesive layer retains it's from well
- it's tendency to fatigue is slight
- it has a very high stability in contact with alkalis and is therefore very suitable for bonding with concrete
- because it is free of solvents, it is especially suitable for bonding materials which are impermeable to gas
- it is suitable for bonding load-bearing constructional elements
- it adheres well to stone even if it is slightly damp
- it is suitable for bonding materials which react in contact with solvents (e.g. polystyrene, ABS)

Field of Application:

FERROLIT 510 is mainly used in the stone-working industry for the weather-resistant bonding and glueing of natural stone (marble, granite) as well as artificial stone or building materials (terrazzo, concrete). By means of the application of high-quality raw materials it was possible to develop a system which hardly yellows. It is thus possible to use it in combination with light-coloured or even white natural stone without the usual intensive yellowing of conventional epoxy-resin systems. Because of it's supple, gel-like consistency the product has a high creep strength on vertical surfaces. It is nevertheless possible to attain thin adhesive joints. Other materials can also be glued with FERROLIT 510, e.g. plastics (hard PVC, polyester, polystyrene, ABS, polycarbonates), paper, wood, glass and many other materials. FERROLIT 510 is not suitable for the gluing of polyolefins (polyethylene, polypropylene), silicones, hydrocarbon fluorides (Teflon), soft PVC, soft polyurethane, butyl rubber and metal.

Instructions for Use:

1. Contact surfaces must be thoroughly cleaned and lightly abraded.
2. Two parts (by weight or volume) of component A are to be thoroughly mixed with one part of component B until a homogeneous colour is attained.
3. The mixture remains workable for ca. 20 – 30 minutes at 20° C. After ca. 6 – 8 hours (20° C) the bonded parts can be transported, after 12 – 16 hours (20° C) they can bear loads and be tooled. The maximum strength is reached after 7 days (20° C).
4. Tools can be cleaned with nitro dilution.
6. Warmth accelerates and cold retards the hardening process.

Special Hints:

- The optimal mechanical and chemical properties can only be attained by adhering to the exact mixing proportions; excess of component A or B has the effect of a plasticizer and can cause discolouration of the marginal area.
- Component A and B should be extracted with separate spatulas.
- The adhesive is no longer to be used if it has already thickened or has jellied.
- The product is not to be used at temperatures bellow 10° C because it will then insufficiently harden.
- At constant temperatures above 50° C the hardened adhesive is inclined to yellow.
- The hardened adhesive can no longer be removed by means of solvents. This can only be achieved mechanically or by applying higher temperatures (> 200° C).
- If the adhesive has been correctly worked it presents no hazard to health when the hardening process is completed.
- The A-component tends slightly to crystallise (honey effect). The product can be made workable again by warming it.
- The stability of the bonding is highly dependent upon the natural stone which is to be bonded. Silicate-bound stones react better than carbonate-bound stones.

Safety Measures: see EC Safety Data Sheet

Technical Data:

1. Component A: colour: colourless – slightly yellow, milky
   density: ca. 1.17 g/cm³

   Component B: colour: colourless – slightly yellow, milky
   density: ca: 1.13 g/cm³

2. Working time:
a) a mixture of 100 g of component A + 50 g of component B

at 10° C:	60	-	70 minutes
at 20° C:	20	-	30 minutes
at 30° C:	15	-	20 minutes
at 40° C:	5	-	10 minutes

b) at 20° C with varying amounts

20 g of component A	+	10 g of component B:	35 – 45 minutes
50 g of component A	+	25 g of component B:	25 – 35 minutes
100 g of component A	+	50 g of component B:	20 – 30 minutes
300 g of component A	+	150 g of component B:	15 – 25 minutes

3. The hardening process (Shore D hardness) of a 20 mm layer at 20° C

3 hours	4 hours	5 hours	6 hours	7 hours	8 hours	24 hours
--	30	51	67	74	76	81

b) at 20° C with varying amounts

20 g of component A	+	10 g of component B:	35 – 45 minutes
50 g of component A	+	25 g of component B:	25 – 35 minutes
100 g of component A	+	50 g of component B:	20 – 30 minutes
300 g of component A	+	150 g of component B:	15 – 25 minutes

3. The hardening process (Shore D hardness) of a 20 mm layer at 20° C

3 hours	4 hours	5 hours	6 hours	7 hours	8 hours	24 hours
--	30	51	67	74	76	81

4. Mechanical properties

bending strength (DIN 53452):	60	-	70 N/mm²
tensile strength (DIN 53455):	30	-	40 N/mm²
modulus of elasticity:	2500	-	3000 N/mm²

5. Chemical Resistance

Water absorption DIN 53495	< 0.5 %
Sodium Chloride Solution 10%	stable
Salt Water	stable
Ammonium 10%	stable
Soda Lye 10%	stable
Hydrochloric acid 10%	stable
Acetic acid 10%	conditionally stable
Formic acid 10%	conditionally stable
Petrol	stable
Diesel oil	stable
Lubricating oil	stable

6. Shelf life: 1 year approx. if stored in cool place free from frost in its tightly closed original container.

Notice: The above information is based on the latest stage of our development and application technology. Due to a multiplicity of different influencing factors, this information – as well as other oral or written technical advises – must be considered as non-binding hints. The user is obliged in each particular case to conduct performance tests, including but not limited to trails of the product, in an inconspicuous area or fabrication of a sample piece.