

WearShield

Epoxy Wear Compound

Description

Sylmasta WearShield is a two-part epoxy paste heavily filled with alumina beads. It is applied to equipment, machine parts and surfaces made of metal, wood and most plastics to form a new alumina-reinforced layer, offering ultimate resistance against impact damage, wear, abrasion, corrosion and chemical attack.

WearShield is used in a variety of industries, from mining to power plants, to protect and repair a diverse range of processing and plant equipment. It is ideal for the maintenance and repair of ash handling systems, scrubbers, silos, chutes, metal castings and more. The light consistency makes it easier to mix than stiff and heavy traditional epoxy pastes and it is thixotropic, meaning it will not sag. WearShield sets to a grey colour with the alumina beads visible in the cured material.

Applications

- Protecting equipment from impact, wear and abrasion
- Repairing heavy damage to ash handling systems, scrubbers, silos, chutes, mills, metal castings, etc.
- Applications requiring protection against corrosion and chemical attack

Advantages

- Alumina filled for very high impact and abrasion resistance
- Non sag
- Easy to mix and apply
- Work time of up to 60 minutes enables more epoxy to be mixed and applied without the threat of premature curing
- Effective on metal, wood and most plastics

Directions for Use

Surface Preparation

- Surfaces must be prepared prior to application.
- All surfaces must be dry and free of grease. Clean and roughen the surface for optimum adhesion.
- Remove all paint, rust and grime from the surface by abrasive blasting or with sandpaper.
- If applying to aluminium, remove oxidation from surface for optimal adhesion.
- Roughen the surface first, ideally by grit blasting (8-40 mesh grit) or through grinding with a coarse wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed. Do not 'feather edge' - WearShield must be 'locked in' by defined edges and a good 3-5mm profile.
- Metal which has been in contact with seawater or other salt solutions should be grit blasted, high pressure water blasted and then left overnight to allow salts in the metal to 'sweat' to the surface. Repeat this process if necessary to 'sweat out' all of the soluble salts.
 - Test for chloride contamination before application.
 - The maximum soluble salts left on the substrate should be no more than 40 ppm.
- Use a solvent cleaner to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.
- In cold working conditions, it is recommended the repair area is heated to 37°C-43°C prior to application. This will dry off any moisture, contamination or solvents for maximum adhesion.
- Apply WearShield as soon as possible after preparation to avoid oxidation or rusting.

Mixing WearShield

- Measure 2 parts resin to 1 part hardener by volume or weight. For convenience when mixing an entire kit, WearShield is supplied with Part A and Part B in the correct 2:1 mix ratio.
- Transfer measured parts onto a clean, dry and flat surface.
- Mix together with a trowel, other hand tool or stirrer until the epoxy is streak free and a uniform colour.
- When mixing larger quantities, a spiral mixing blade attached to a pneumatic or high torque electric drill can be used.
- In colder climates or when resin or hardener temperatures are below 15°C, preheat the resin to around 32°C. Do not exceed temperature of 38°C.

Application Method

- WearShield should be applied at room temperature. It can be applied when temperatures are between 13°C and 52°C.
- Wetting the prepared surface ensures the best possible contact with WearShield and avoids air entrapment.
- Wearing gloves, apply a scratch coat by taking a small ball of mixed WearShield (around 25mm) and rubbing the surface.
- Spread WearShield over prepared surface with a putty knife. Press firmly to ensure maximum surface contact and avoid trapping air.
- Continue application until WearShield has been built to the desired thickness. This should be at least 6mm.
- To create a smooth surface, apply a small amount of isopropyl alcohol or acetone. Smooth using a trowel or gloved hand as the solvent prevents sticking. Do not use water as this will leave a white film on the finished surface.
- WearShield work time is between 30 and 60 minutes dependent on the ambient temperature and the volume of WearShield applied. A larger mix volume and higher temperatures will reduce work time. A functional cure is achieved in 8-12 hours and a full cure in 24 hours.

Whilst all reasonable care is taken in compiling technical data on the Company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company. It is the customer's responsibility to satisfy themselves that each product is fit for the purpose for which they intend to use it, that the actual conditions of use are suitable and that in the light of our continual research and development programme the information relating to each product has not been superseded.



Technical Data

Minimum shelf life (months @ 24°C).....	24
Mix ratio (weight).....	2:1
Mix ratio (volume).....	2:1
Working time (minutes)	30-60 depending on quantity of epoxy mixed and ambient temperature
Recoat time (hours).....	4
Functional cure (hours)	8-12
Full cure (hours).....	24
Lap shear strength (MPa)	20
Shore D hardness (full cure, 24 hrs)	87
Specific gravity (g/cm ³).....	2.12
Shrinkage (%)	<1
Non-volatile content (%).....	100
Maximum service temperature	
Wet (°C).....	60
Dry (°C).....	120

(values are typical and should only be used as a guideline)

Packaging

Product Code	Pack Size
PWEAR-3kg	3kg
PWEAR-13kg	13kg

Storage

WearShield should be stored out of direct sunlight in dry frost free conditions of temperatures between 15°C and 20°C. Under such conditions, shelf life will be two years from the date of manufacture.

Health & Safety

WearShield consists of epoxy resins and hardener systems. Please consult the individual Material Safety Data Sheet for hazard information. Wear eye protection and rubber or plastic coated gloves. Wash hands with soap and water immediately after use.

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