

PRODUCT INFORMATION

Asplit® HES

PRODUCT DESCRIPTION

Asplit HES is a grey, halogen-free Sodium Silicate mortar, which by mixing with water, chemically reacts to harden. The Hardener and Binder are included in the powder.

FIELDS OF APPLICATION

Asplit HES is used mainly as a polarising mortar for ceramic lining of chimneys in domestic households. Further, it is also used for the laying of Tiles, Bricks and Shapes for Floors and Vessel linings.

Asplit HES exhibits good properties to water and rinsing actions for several weeks, yet permanent rinsing is not possible. For constant rinsing or abrasion resistance, use an **Asplit** Synthetic Resin-based mortar for jointing.

Except for hydrofluoric acid, **Asplit HES** is resistant to all acids, solvents, oxidising agents, oils and fats; but it is not resistance to alkalis.

FEATURES

- Halogen-Free, containing no Fluoride
- Extreme high corrosion protection
- Temperature Resistance to +900 °C
- Easy to use

CHEMICAL RESISTANCE

Information on the chemical resistance properties are available on request.

SUBSTRATE

Components shall be designed and manufactured in accordance with EN 14879-1. Before **Asplit HES** is applied, the suitability of the object is checked and recorded that it conforms to the requirements for surface preparation in accordance with DIN EN 14879-1.

Concrete substrates should be primed with a scratched barrier layer of a Potassium Silicate-type thin consistency mortar mix, to ensure that the surface porosity is sealed; so as to prevent the intrusion of liquid acid.

SURFACE PRE-TREATMENT

C-Steel

All contaminants, including non-visible detectable contaminants, must be removed in accordance with DIN Fachbericht # 28 and EN ISO 8502.

Ferretic steel surfaces shall be abrasive blasted to "Near White Metal". A standard preparation degree of SA 2½ according EN ISO 12944-4 must be achieved. To prevent flash rust, the primer must be applied immediately after blasting and cleaning of the substrate.

Concrete

Appropriate action shall be taken to prepare the concrete surfaces; dry and free of dust and free of contaminants such as oil or grease. The concrete shall have minimum peel

strength of 1.5 MPa. The residual moisture content must not exceed 4%.

A mechanical treatment by blasting with solid abrasives, high pressure water blasting or shot blasting is recommended. Blasting is also required after milling, flame blasting or prying.

PROCESSING

Environmental Conditions

Environmental Conditions	Value
Relative Humidity	Max. 80%
Surface Temperature	Min. +10 °C, max. +30 °C
Application Temperature	+20 ± 5 °C is recommended
Dew Point Distance	≥ 3K

Equipment

The following equipment is essential for the application of **Asplit HES**:

- Stirrer (max. 300 r/min.)
- Measuring Jug and Mixing vessels
- Wide brushes & Lambs wool rollers
- Mortar Trowel
- Jointing Trowel, Joint Extruder
- PSA (safety glasses, rubber gloves etc.)

Mixing

Pour the water into a mixing tub. Add the **Asplit HES Powder** mixing constantly and thoroughly (3 min) until a homogenous and lump-free mass is produced.

When mixing **Asplit HES**, a characteristic is that mixture is often found to be too dry at first; although after 5 min of mixing, a mix is produced which is good to apply.

Mixing Ratio

Scratch Barrier for 1m ²	Kg	Parts per weight	Parts per volume
Water	0.20 kg	100	2.00 L
Asplit HES Powder	0.80 kg	400	7.55 L
Asplit HES		Kg	Parts per weight
Water	0.25 kg	100	1.00 L
Asplit HES Powder	1.75 kg	700	6.60 L
		2.00 kg = 1 Liter	

Application

The Scratch Barrier is applied on the substrate by using a wide Brush or a Lambs wool roller.

Asplit HES is applied with a Mortar Trowel on to the substrate base and to the material to be applied. The bricks or shapes are to be fully bedded and jointed, avoiding any voids, lumps or cavities.

Consumption

Fully Bedded Laying (Bed Joint 5 mm / Cross Joint 7 mm):

Material	Measurements	Usage
Tiles	240 x 115 x 20 mm	approx. 15 kg/m ²
Tiles	240 x 115 x 40 mm	approx. 18 kg/m ²
Bricks	240 x 115 x 65 mm	approx. 23 kg/m ²
Bricks	240 x 115 x 80 mm	approx. 26 kg/m ²

Pot Life

Temperature	Asplit HES
20 °C	approx. 90 min.

Curing

Load Capacity	Time
Accessible	24 hours (at 20 °C)
Chemical Load	10 days (at 20 °C)

Post Treatment

The Brickwork and Flooring, with **Asplit HES** will be water-proof after 10 days, even if it is not acidified. If an earlier waterproofing is sought, then it should be acidified.

Acidifying is also necessary when **Asplit HES** is applied without jointing; where it is to be post jointed with a Furanic or Phenolic resin-based mortar. In this case, after the Potassium Silicate mortar is set, it is necessary to acidify the voids / joints 2 or 3 times, with a few hours interval between. Acidifying can be done with a mixture (by weight) of: 20% Alcoholic Sulphuric Acid (mixture of 20 Parts Water + 20 Parts 96% Sulphuric Acid + 60 Parts Isopropyl Alcohol).

20% Watery Sulphuric Acid can also be used, but it has a slower drying time. When mixing, the water has to be added first.

Operation / Start-Up

Brick and Tile Linings with **Asplit HES**, can be exposed to chemical stresses of fluids, at the earliest after 5 days; except when the liquid temperature is +150 °C, then there should be a time lapse of 8 -10 days after completion. In the case of chimneys, the actual Norms and Guidelines should be followed.

Technical Data	Standard	Unit	Value
Flexural Strength	DIN EN ISO 178	N/mm ²	10
Density (Completed mixture Asplit HES)	DIN EN ISO 2811-1	g/cm ³	2.0
Compressive Strength (Cylinder)	DIN EN ISO 604	N/mm ²	25
Modulus of Elasticity	-	N/mm ²	1.1 x 10 ⁴
Lineal Co-efficient of Expansion	-	K ⁻¹	12 x 10 ⁻⁶
Max. Operating Temperature	-	°C	900
Thermal Conductivity	-	W/(m · K)	1.2

Information given in the fact sheet above corresponds to the current knowledge available to us regarding our products at the time of its drafting and is intended as a guideline for informational purposes. However, because of the multiple possibilities regarding possible applications, processing and on site conditions, any information given in the fact sheet above is not legally binding, in particular, without being limited to, such information shall not be interpreted as a warranty of merchantability or of fitness for a particular purpose. Customer therefore is advised to conduct its own testing or make an inquiry with our technical department before ordering. We reserve the right to change the product at any time, in particular, without being limited to, minor changes because of advancements in technology. If by way of exception, the information given in the fact sheet above is incorporated by reference into any contract concluded with us under German Law, such information, shall only be interpreted as determining the specific requirements of the contractual products as set out in § 434 BGB (German Civil Code) and shall not be interpreted as constituting a guarantee of condition.

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Brick Lined Vessels or Apparatus, should be put into operation initially with diluted Mineral Acids. If there is a long period of time between the completion of the linings and normal operation; or after the Apparatus has been out of service for a longer time, it is mandatory to fill the Vessel or Apparatus with a weak concentration of acid and water. Open Vessels should be covered.

Cleaning

Clean all equipment immediately after use with Water. The cleaning is to be carried out as long as the material is not cured.

SAFETY MEASURES

The material safety data sheets of the individual components, the safety instructions on the packing (label) as well as the legal requirements for handling hazardous materials must be observed.

PACKING UNITS

The products are supplied in the following standard package sizes:

Product	Size	Product-No.
Asplit HES Powder	25 kg	592 0110

STORAGE

The materials must be stored at a cool and dry place, protected from direct sunlight. At the specified storage temperatures, the minimum shelf life of the products is given for the following periods:

Product	Temperature	Shelf Life
Asplit HES Powder	-	24 month

If the storage time is exceeded, the materials must be tested before use. Higher storage and transport temperatures will reduce the shelf life. The containers must be kept tightly closed. Liquid products must be stored frost-proof.