WENCON®

CS Hi-Build

SPRAYABLE SOLUTION

Extreme high build, abrasion, impact and chemical resistant, coating.

Application Areas

- Rudder and hull
- Steel and concrete storage tanks
- Separators
- Evaporators
- Scrubbers
- Absorbers
- Heat exchangers
- Turbines
- Pipelines and pumps
- Vessel propulsion areas

Advantages

- Extreme high build
- High impact resistance
- Abrasion, heat and chemical resistance
- Strong adhesion to all steel and metal surfaces
- Single and double coat system
- High coverage rate
- Non-electrical leading
- 100% solid, no shrinkage

WENCON ApS • Jyllandsvej 15 • DK-5400 Bogense • Phone +45 6481 1010
wencon@wencon.com • www.wencon.com

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CS Hi-Build Application guidance

Surface Preparation

- We recommend that, the surface preparation prior to the application of Wencon CS Hi-Build must comply with ISO 8501, or a comparable quality certification to ensure the desired level of quality is achieved.
- Clean and degrease all surfaces, including cut-outs, rat holes and welds shall be rounded to a radius of at least 2 mm. Weld splatter must be removed.
- Weld seams burned, and rusty areas blast cleaned to min ISO-Sa 2½ or power tool cleaned to min SPSS-Pt3 prior Grit Blasting
- Rough to an angular profile between 75 – 100 µm (in accordance with ISO 8503 parts 1 and 2)
- Abrasive blasting to a cleanliness of white metal (Sa3/SP5) or near-white metal (Sa 2½ /SP10) followed by removal of all abrasive residues
- The purity of the sandblasting is visualy checked.
- Bresle Sampler test for measuring soluble salts / chlorides in the steel surface (ISO 8502-6) limit value <20 mg / m2.
- Distance to Dew Point of minimum 3˚C throughout the application process.
- Optional: Measurement of any acid contamination of the steel surface is measured (iron sulfate) with KTA Scat test kit, limit value is <10 micrograms / cm2.

Mixing Ratio 2:1

Weight:	66,85 A (Base) to 33,15 B (Activator) (parts by weight)
Volume:	2 x A (Base) to 1 x B (Activator) (parts by volume)

The product is supplied in sets (A+B) of 35kg (27.75L).
We recommend to stir each component before mixing.

Application

Spray

For achieving the desired thickness of the film, it is advised to apply Wencon CS Hi-Build in a single or multiple layers application. It is essential to ensure a smooth and continuous paint film without any pinholes. To obtain the desired thickness of the film, use the appropriate nozzle size and maintain a consistent distance of 30-50 cm between the spray gun and the surface. Verify that the coating's viscosity is suitable and the spray equipment possesses adequate output pressure and capacity to facilitate effective atomization. Enhancing atomization and film formation can be achieved by preheating the curing agent and base prior to mixing. The ideal temperature depends on the desired DFT, nozzle size, and spraying pressure. In the event that a larger nozzle is needed to enhance the spray rate, it may be necessary to heat the coating.

Apply the coating layer homogeneously and as close to the specification as possible. Control paint consumption to avoid excessive film thickness by measuring wet film thickness or controlling paint consumption. It is also recommended to control base and curing agent consumption to keep track of the mixing ratio. The finished coating should have a smooth, glossy surface.

After application, flush the mixing system immediately with epoxy cleaner during breaks in application longer than half the pot-life, it is recommended to flush the system. Avoid air entrapments.

Brush

Final surface may not appear 100% smooth when using a brush, nevertheless, for small areas and touch-ups, hand tools such as brushes can be used for the application. It is recommended to apply each coat across the preceding one whenever feasible, following standard painting practices. We recommend to test before the final application.

Recommended Spray Equipment

- Proportioner pump 2K with remote mix manifold and preheaters.
- Suitable 2K equipment mixing-block at the end of the hoses to have a very short "staying" in the equipment of mixed product.
- The spray equipment should have a solvent flushing pump.
- Nozzle sizes 13 to 21, test for best result depending on temperature.
- Approximately pressure 180 - 250 bar depending on temperature and nozzle size.
- Heated hoses when distance between pump and application location exceed range of standard hose.

Optimal Atmospheric Conditions

No coating shall be applied when the relative humidity is above 85%.

- Coating shall not be applied and dried during fog, mist, rain or if the steel surface temperature is less than 3˚C s above the dew point.
- Surface temperature must be above 10°C [50°F] during application and curing.

Film Thickness

Wencon CS Hi-Build can be applied in film thickness from 100-1500 µm per layer.
WFT/DFT - The product's film thickness remains consistent in both wet and dry conditions due to its volume-solid properties

Product Potlife Spray application

Spray hot airless application	
Mixed	**Fluid**
Potlife @20˚C	55-60 minutes
Potlife @30˚C	20-25 minutes
Potlife @40˚C	13-15 minutes
Potlife @50˚C	5-8 minutes
Potlife @60˚C	2-4 minutes

It is important to note that the use of preheated products, long spray hoses and pressure-induced heat can result in a shorter practical pot-life.

When mixed in pot (for brush applications)

Pot Life @20˚C mixed for application by hand.
Depending on amount mixed product and temperature.
Mixed in small amounts, the pot life is approximately 30 minutes at 20°C.

Curing Time

Temperature	10˚C	20˚C	30˚C	40˚C	50˚C	60˚C
Dry to touch/overcoat	10 hrs.	5 hrs.	3,5 hrs.	2,5 hrs.	1 hrs.	0,5 hrs.
Dry to handle	15 hrs.	6,5 hrs.	5 hrs.	3 hrs.	2 hrs.	1 hrs.
Fully Cured	14 days	7 days	4 days	2 days	1 day	12 hrs.

OVER COATING is optimally performed in the time between tack free and cured. Higher temperatures are not recommendable for application circumstances (substrate and surrounding temperatures).

Applying two or more layers will significantly reduce the effect and generation of pores.

Dyeing of Wencon CS Hi-Build

Before the final application, we recommend making a sample when dyeing Wencon CS Hi-Build.
Use only pigment suitable for epoxy, maximum 2% by Volume. Dyeing of the product is always under user responsibility.

Disclaimer

Any Modification to the product falls under user responsibility.

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CS Hi-Build Physical Properties

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Properties at 20˚C

	Component A	Component B
Density (g/cm3)	1,26	1,26
Viscosity (mPa·s)	17871	2206
Appeareance/Fineness	Spatula-smooth	Spatula-smooth

Properties at 20˚C - Once Mixed (100 g.)

Mixing Ratio (Volume)	2:1
Mixing Ratio (Weight)	66,85 : 33,15
Density	1,26 g/cm3
Potlife	60 min.
Peak Exotherm	120˚C after 92 min.
Heat Resistance	210˚C
Coverage Rate, theoretical	0,76 kg/m2 (0,60 l/m2)

Compressive Strength

SO (mm2)	E (N/mm2)	Fcrack (N)	Rcrack (N/mm2)	Fmax (N)	Rmax (N/mm2)	Compression (%)
161,39	2517,0	14684,7	91,0	14694,7	91,1	47,09

Tensile Strength

SO (mm2)	E (N/mm2)	Fcrack (N)	Rcrack (N/mm2)	Fmax (N)	Rmax (N/mm2)	Elongation (%)
39,78	369,4	819,0	20,6	824,5	20,7	2,94

Hardening

Time	16 hrs.	24 hrs.	7 days
Shore D @ 20 °C	83	83	83

Adhesion NEN-ISO 4624

	(N/mm²)	Pull off Type
To Steel	7,6	40% -/Y, 60% Y/Z
To Aluminum	7,2	-Y 95%, Y/Z5%
To Concrete	5,6	100% A (=integral strength of the concrete)

Dielectric strength

Dielectric strength	26,5 KV/mm	DIN 53483

Coverage Rate

Theoretical	0,76 kg/0,6 l per m2 at 600 µm

Compatibility

We recommending testing the compatibility between the CS Hi-Build and other products prior to full application.

When still tacky

- Wencon CS Hi-Build is in general compatible with other epoxy-polyamide / amine paint & polyurethane coatings.
- Can be applied on other epoxies as well as some polyester(s) (fabric).

When cured

- Wencon CS Hi-Build is in general compatible with other epoxy-polyamide / amine paint & polyurethane coatings. These substrates bond well to each other as long as the surfaces are clean and slightly abraded.

Storage & Shelf life

Only use containers specifically approved for the substance/product. Store only in original container.
Shelf life, if stored in dark dry place, 3 years @ 20 °C.

Chemical Resistance

See chemical resistance list or consult relevant contact for lab test.

Taber Test CS Hi-Build

CS Hi-Build	Start weight (g)	End weight (g)	Weight loss (g)	Average Wear index
Test 1	87,20	87,10	0,10	95,8
Test 2	75,64	75,55	0,09	

Wear Index (Taber) according to ISO 7784-2 performed on a Taber Digital Abraser model 5130.

Handling precautions

Read the instructions for use. For the latest MSDS version visit www.wencon.com

Recommended Inspection and QC

The inspection shall cover the complete application process, i.e. surface preparation and paint application. Supervision of the coating work recommended to be conducted and comply with ISO 12944-7:" Paints and Varnishes", part 7 and ISO 12944-8: "Paints and Varnishes", part 8.

Viscosity Curve

Component A		Component B	
Temperature (˚C)	Viscosity (mPa·s)	Temperature (˚C)	Viscosity (mPa·s)
20	17871	20	2206
30	9613	30	1393
40	6030	40	1093
50	4257	50	815
60	3310	60	676