

FlexiChar®

C20i(H)

Is a fast curing fully flexible two pack hybrid intumescent coating for use in coatings workshops and onshore/offshore oil & gas and petrochemical facilities. The system provides up to 120 minutes of fire protection in accordance with UL1709:2017 and jet fire protection in accordance with ISO22899-1:2007 for a duration of 20 minutes for structures and processing equipment. FlexiChar® is applied with an air driven, single leg pump or with a basic specification plural pump.

Product construction

The system comprises of multiple layers of unique C50 phenolic syntactic foam and D2004 phenolic glass reinforced laminate which combine to provide passive fire protection and thermal insulation.

1. Blasted steel substrate

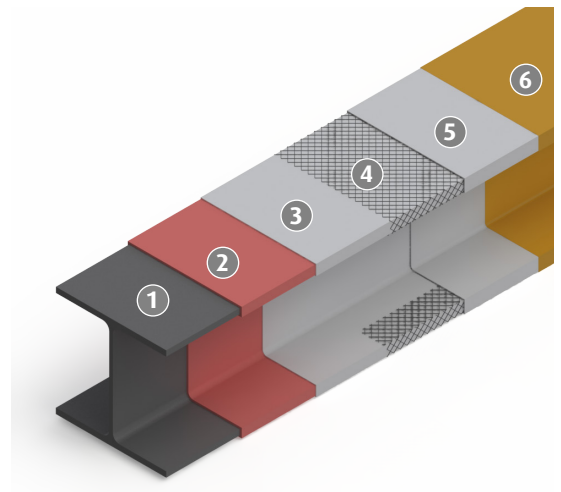
2. Approved primer

3. FlexiChar® C20i(H)

4. FlexiChar® mesh

5. FlexiChar® C20i(H)

6. Top coat



FlexiChar® C20i(H) is a low VOC, one coat, high build system, based on hybrid polymer technology

Finish FlexiChar® C20i(H) can be applied to a smooth matt finish. A compatible top seal should be used.

Colour Part A: white, part B: translucent black, mixed: off-white, cured: off-white

Product characteristics

- Highly efficient single application with mid-depth flange mesh
- Market-leading, thinnest dry film thickness (DFT) across the 60,90,120 minutes fire duration in accordance with UL1709:2017
- Low VOC and no solvent entrapment
- Complete application of 2-hour UL1709:2017 rating in a single shift
- Jet fire rating JF/structural steel/210/20 (JF20) in accordance to ISO22899-1:2007
- Shower-proof within 60 minutes after application and transportable in 8 hours
- Fast setup time with simple application using single leg pump
- Product remains flexible down to arctic temperatures
- Low smoke generation as per IMO MSC 307 (88) annex 1, part 2 smoke and toxicity testing
- Direct application over galvanised surfaces and bolts with suitable surface preparation.

Temperature considerations

- Operating temperature range for structures and processing equipment: min: -52°C / -62°F
max: +80°C / +176°F
- Low atmospheric temperature limit for site application: -5°C / 23°F
- High atmospheric temperature limit for site application: +40°C / 104°F
- Maintains flexibility at -52°C / -62°F.

Additional characteristics

- Hybrid polymer, non-epoxy materials technology
- Low smoke generation as per IMO MSC 307 (88) annex 1, part 2 smoke and toxicity testing
- Direct application over galvanised surfaces and bolts with suitable surface preparation
- Low VOC and no solvent entrapment or prolonged solvent odour
- Volume solids 85%.

Surface preparation and priming

- Substrate must be sound, dry and free from any contamination and surface prepared in accordance with AIS guidelines
- Blast until finish complies with standard SIS 05 59 00, preparation grade SA 2.5 or ISO 8501-1:2007
- AIS recommends the use of solvent based epoxy primer for C3 and above environments. Compatibility with each specific epoxy primer should be checked before use
- Primer system should be of specified minimum thickness, fully cured, and within over-coating interval guidelines for the system used
- The system is not suitable for use over single pack primers
- For use over galvanised surfaces or other substrates check with AIS technical department before use.

Environmental consideration

- Ensure greater than adequate through ventilation during application
- Application temperature range -5°C / 23°F to +40°C / 104°F, relative humidity <95% and a steel surface temperature at least 3°C / 6°F above the dew point.

Application equipment**Mixing**

- Always mechanically mix product in full pack volumes
- Ensure the two components are thoroughly combined until a uniform colour is obtained.

Application advice

- Application of FlexiChar® should only be completed by approved applicators
- Please refer to FlexiChar® application manual before beginning application
- Keep all product containers closed when not in use
- Part B is moisture sensitive and should remain tightly closed before use
- Once opened the kit should be mixed within 15 minutes
- The product should be spray applied at close proximity, 600mm from the surface, to avoid dusting and promote good surface coalescence
- Use of a wet film gauge is essential
- Apply 1.18 mm wet film thickness (WFT) for 1.0 mm dry film thickness (DFT).

Single leg pump application

- Graco extreme 60:1 single leg pump, air driven, electric free (complies with ATEX directive 2014/34/EU)
- Graco mark 5 or equivalent (suitable for onshore and non-explosive areas).

Note: If the user needs to stop spraying for longer than 15 minutes flushing will be necessary.

Plural PFP pump application

- Plural components sprayer, Graco XM, electric free, ratio set up at 5.6:1, no heating required
- Alternative pumps can be considered in consultation with technical team.

Site work

- Galvanised bolts, once degreased, can be coated with no further preparation
- Damaged coatings can be trimmed to a feathered edge and the material trowelled in one application
- The applied product once cured can be easily finished to a high level, by sanding or tooling with either electrical or hand tools.

Cleaning

Flush spray equipment with xylene solvent (wearing full PPE equipment), do not use solvents which contain water, as these will result in premature curing of the product in the spray line or spray pump.

**Loading tables
pool fire (UL1709:2017)**

Loading table - in accordance to UL1709:2017 (critical temperature 538°C / 1000°F)

Time period (mins)	Hp/A (m-l)	DFT (mm)	WFT (mm) or litres per sqm	kg/m ² (Wet)
60	95	4.0	4.7	6.9
	170	4.0	4.7	6.9
	253	4.8	5.6	8.2
90	95	4.0	4.7	6.9
	170	5.2	6.1	8.9
	253	7.4	8.7	12.7
120	95	4.5	5.3	7.7
	170	7.2	8.5	12.4
	253	9.6	11.3	16.5

Maintenance and repair

Damaged areas should be abraded back to a sound surface. Once repaired top seal should be re-applied.

Top seal requirements

Once DFT's have been achieved documented and signed off to QA procedures / installation manual, a top seal can be applied, if desired. Ensure the FlexiChar® C20i(H) is completely cured before applying top seal, at 20°C a period of 48 hours is recommended.

For UV exposure an approved solvent based polyurethane or polysiloxane topseal is required.

Packaging

Packaging	Part A and part B supplied as 25kg kit (17.1 litres)
Environmental considerations	Low VOC and no solvent entrapment or prolonged solvent odour
Availability	Only available direct from AIS UK and in-country branches/manufacturing facilities together with licensed Joint Venture partners to customers with NACE qualified supervision, trained and approved and certified QA audited by AIS

Transportation

FlexiChar® C20i(H) is compliant with the exemption for all shipping by road (ADR 2.2.3.1.5), as a Class 3 'flammable liquid' under the dangerous goods regulations.

Health and safety**Health and safety precautions**

Our safety data sheet and installation Instructions must be read, understood and adhered to before use. Flammable – keep away from open flames and other ignition sources.

Personal protective equipment (PPE)

Use in well ventilated conditions and ensure all recommended personal protective equipment is worn during handling and use of this product. For full recommendation, refer to our safety data sheet.

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For further details about AIS and our products or services, please contact us:

Quedgeley West Business Park, Bristol Road, Gloucester, GL2 4PA, UK
t: +44 1452 880880
e: info@aisltd.com
www.aisltd.com