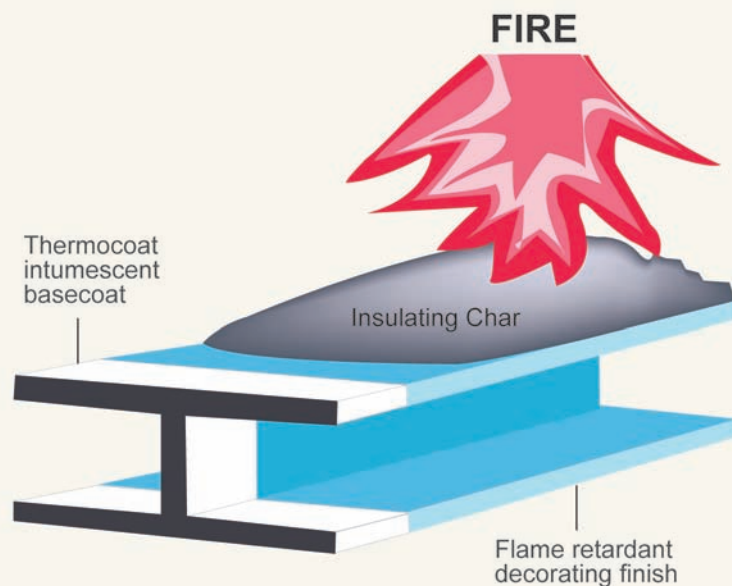


# Fire Protection for Steel and Cables

Vinyl acetate-based binders for flame retardant coatings



## **For Intumescent Coatings**

Mowilith® DM 230

- Vina-Copolymer-based
- High performance
- For use in water-based paint formulations containing solvents

## **For Ablation Coatings**

Mowilith® DC

- Vina-Homopolymer-based
- Good adhesion
- For use in water-based formulations containing solvents

Mowilith® LDM 1880

- VAE-based
- Low tack
- For solvent-free paint formulations
- Can be combined with Mowilith® DC to optimise elasticity and tack

Mowilith® LDM 1871

- VAE-based
- Low tack
- For solvent-free paint formulations
- Can be combined with Mowilith® DC to optimise elasticity and tack

## **Mitigate fire damage with vinyl-based emulsions for intumescent and ablation coatings**

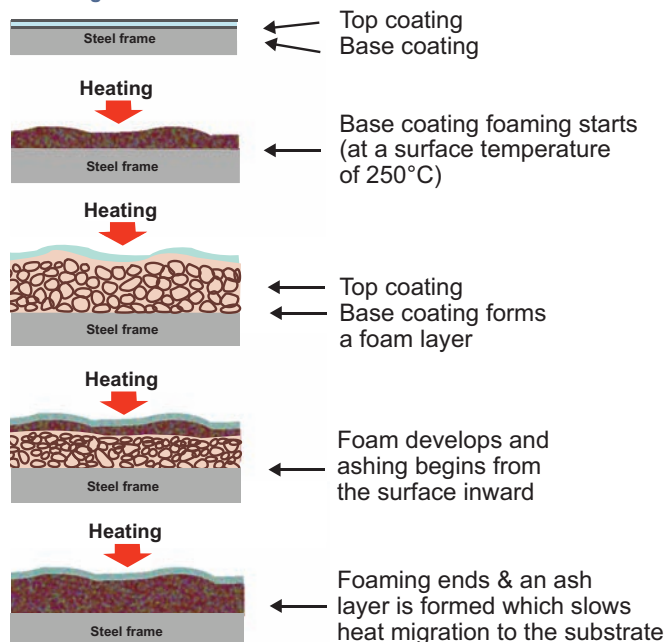
As nations continue to create and raise fire protection standards for commercial buildings, it becomes increasingly important to manufacture paints and coatings that will significantly retard structural fire damage. With Celanese vinyl-based emulsions, you can formulate high-quality flame retardant coatings that meet government requirements while still retaining a decorative aspect. There are two ways to protect building materials – specifically steel and cables – with coatings formulated with Celanese emulsions: intumescent coatings and ablation coatings.

Intumescent coatings (ITC) are an especially efficient fire protection method for steel. ITCs begin to swell and char when exposed to flames and then rapidly react to become a compact foam that delays heat migration. For this approach, Celanese offers Mowilith DM 230 for conventional water-based paint formulations still containing solvents.

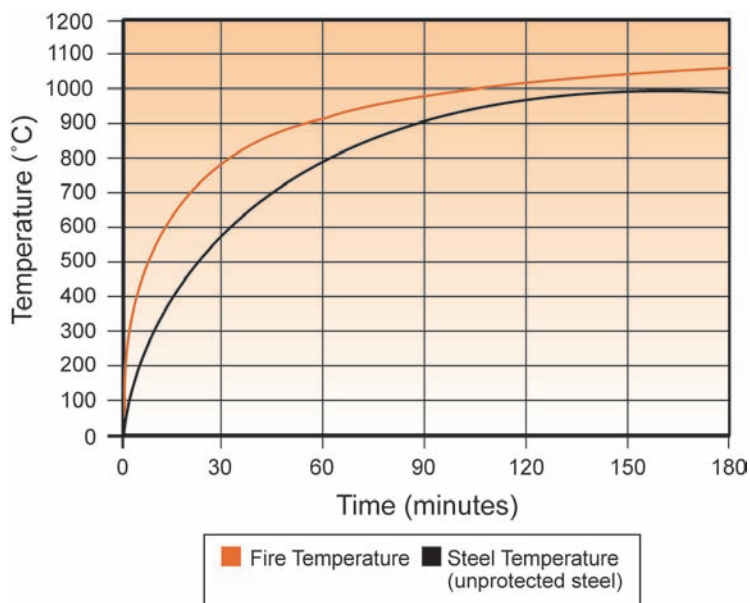
Ablation coatings are based on a water release system that dilutes the flames and forms an oxygen-depleted layer next to the burning surface. Coatings formulated with Mowilith DC, Mowilith LDM 1871 or Mowilith LDM 1880 result in excellent water and humidity resistant products.

## Intumescent Coatings

### Foaming mechanism



## Impact of Heat on Unprotected Steel



Unprotected steel weakens when exposed to temperatures above 500°C. Under conditions of a typical fire, it can reach this critical temperature in approximately 20 minutes, resulting in instability and risk of complete collapse.

## Typical Properties

	Product	Stabilisation	Polymer Type	% Solids	MFFT (°C)	T <sub>g</sub> (°C)	pH	Particle Size (µm)	Brookfield Viscosity (mPas)	Spindle/RPM (RVT)	Self Crosslinking	APEO-free
Intumescent Coatings	Mowilith® DM 230	E/C	Vina/VeoVa™	50	14	24	4.0	0.1-0.8	1500-3500	3/20	No	No
Ablation Coatings	Mowilith® DC	E/C	PVAC	56	18	38	4.5	0.3-2.0	1000-4000	3/20	No	Yes
	Mowilith® LDM 1871	E/PVOH	VAE	53	0	11	4.5	0.10-0.45	1000-4000	3/20	No	Yes
	Mowilith® LDM 1880	E/C	VAE	55	0	10	5.0	0.10-0.55	1000-3000	3/20	No	Yes

E = emulsifier; C = cellulose derivatives; PVOH = polyvinyl alcohol

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Europe  
Celanese Emulsions GmbH  
Industriepark Höchst  
Building C657  
65926 Frankfurt am Main  
Phone: +49 (0) 69/305-2876  
Fax: +49 (0) 69/305-16420

[www.celanese-emulsions.com](http://www.celanese-emulsions.com)

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