



# Hydratherm IMS

*Intumescent Coating for Steel Structure*

*Meets ASTM E-119, BS476 Pt21*

## Description

Hydratherm IMS is a fireproof coating intumescent type especially use as steel structure protection. Meets ASTM E-119, BS476 Pt21

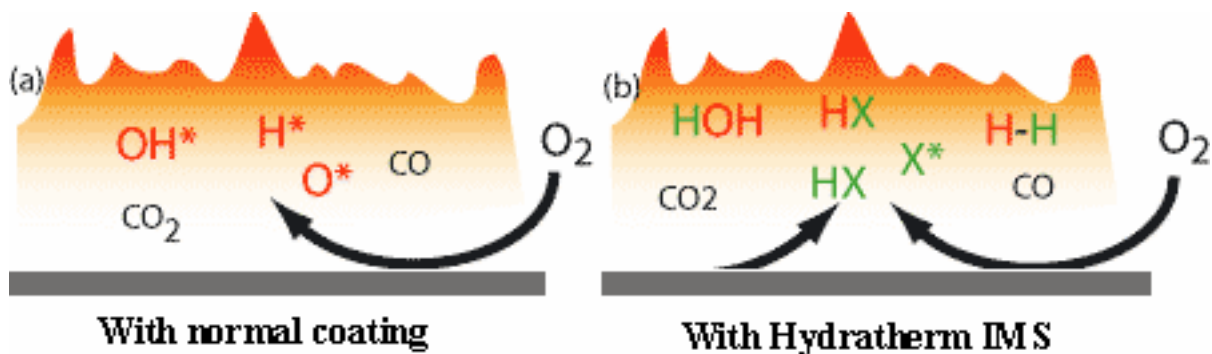
## Objects

Protect the steel frame form collapse.

## Advantage

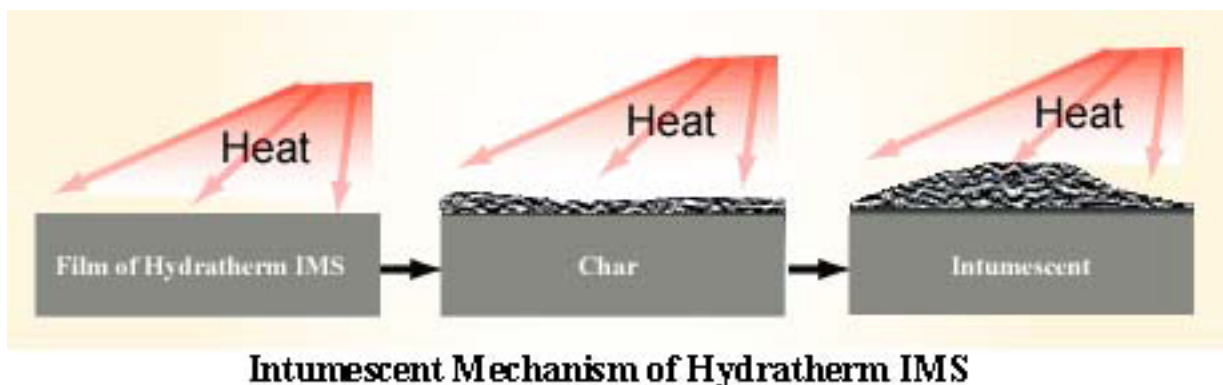
Hydratherm IMS will protect the steel in 2 Phase.

- Gas phase



The Hydratherm IMS will stop the radical mechanism of the combustion process that takes place in the gas phase. The exothermic processes, which occur in the flame, are thus stopped, the system cools down, the supply of flammable gases is reduced and eventually completely suppressed. The high-reactive radicals  $\text{HO}\cdot$  and  $\text{H}\cdot$  can react in the gas phase with other radicals, such as the gas which release from Hydratherm IMS when heated,  $\text{X}\cdot$  resulted from flame retardant degradation. Less reactive radicals which decrease the kinetics of the combustion are created and also decrease the heat transfer from the fire to the steel structure.

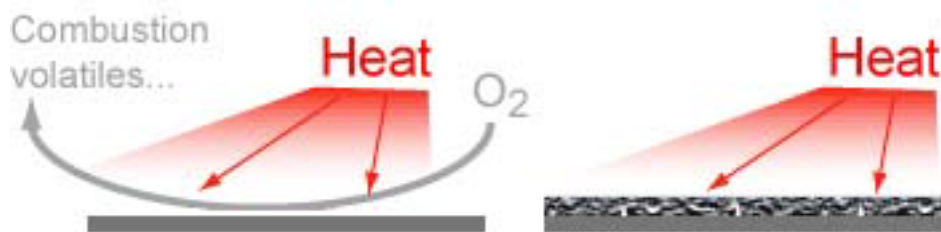
- Physical phase



Hydratherm IMS can cause a layer of carbon (charring) on the film. This occurs, for example, through the dehydrating action of the Hydratherm IMS generating double bonds in the film. These processes form a carbonaceous layer via cyclizing and cross-linking processes cycle.

Flame retarding film by Hydratherm IMS is essentially a special case of a condensed phase mechanism. The activity in this case occurs in the condensed phase and radical trap mechanism in the gaseous phase appears to not be involved.

In intumescence, the amount of fuel produced is also greatly diminished and char rather than combustible gases are formed. The intumescent char, however, has a special active role in the process. It constitutes a two-way barrier, both for the hindering of the passage of the combustible gases and molten polymer to the flame as well as the shielding of the polymer from the heat of the flame.



**Protective Layer generated by Hydratherm IMS**

The protective layer which generated by the intumescent reaction will act as an insulator that can reduce the heat transfer to the steel structure.

## Surface Preparation

The surface should be clean by abrasive blast-clean. Coating should be apply before the degradation of the surface take place.(normally within 4 hr.) If oxidation takes place the steel must be remove. The surface must be clean out of rust, laitance, oil, grease and dust.

## Primer

The fire protection system's anti-corrosive primer is recommend. (also available form ACT in the name of Hydratherm Primer)

## Application

- Stir thoroughly before use until the product is homogeneous.
- Apply the product by roller, brush or spray.
- Wait for 16-24 Hr. between re-coat.(if require)

## Dilution

The product is supplied in ready to use, the dilution is normally not required. If necessary, dilute with maximum 5% with xylene and mix it consistency before use.

## Overcoat

The overcoat can be apply if require the aesthetical or to protect from atmospheric attack. (also available from ACT in the name of Hydrarroofex , Polyflex 79P etc. depend on the desired properties)

## Characteristics

Appearance	:	White
Solid	:	70 %
Specific Gravity	:	1.30
Drying Time : Touch Dry	:	4-6 Hr.
Re-Coat	:	16 – 24 Hr.
Full-Cure	:	5 Days.

## Standard

ASTM E-119, BS476 Pt21

## Storage

In unopened packs, Hydratherm IMS has a shelf life of at least 12 months when stored in warehouse condition below 35 °C. However not be stored at very low temperatures, to guarantee a good working consistency.

## Packing

23 kg. in metal pail.

## Precaution

Hydratherm IMS can cause an allergic reaction after prolonged contact with sensitive skin. Therefore avoid contact with skin and use protective equipment. Rubber gloves and protective clothing are recommended. After contact with skin wash immediately with plenty of water and soap. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. Ensure good air circulation in the room.

## Cleaning

The working equipment, tools etc., can be mechanically cleaned by using brushes in combination with xylene or any aromatic solvent. The cleaning should be done immediately after the completion of the work and within the pot life of the material to avoid sediments on the equipments, tools etc.

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