

THE SFR EFFECTS.

When the idea for a line of products was developed for the real and efficient protection of construction materials, the engineers of CAMM began to research the real causes of the phenomena that provoke the deterioration of building materials and structures.

The results are exposed on the following Table 1.

TABLE 1

CAUSES OF DETERIORATION ON THE MATERIALS		
CAUSES	EFFECTS OVER THE MATERIALS	EFFECTS OVER THE BUILDING
UV Rays	Change of the molecular structure Change of color Change of the physical properties (elasticity, fragility, etc.)	Cracking of the paint, protectors, plasters, plastic parts, glass fiber, etc. Loss of elasticity Increased fragility
Infrared Rays, Heat transmitted by contact	Dilatation Deformation Change of the physical properties	Thermal movements of the structures, walls, roofs Formation of holes and cracks
Light	Change of the molecular structure Change of color	Change of color of paints, woods, plastic parts, glass fiber
Water	Oxidation Expansion Deformation Erosion	Oxidation of the metallic materials Formation of saltpeter, mildew, fungus, etc.
Environment: - Pollution - Acid rain - Animal excrement - Salinity - Raw weather	Corrosion Erosion Chemical changes Change of color	Slenderizing materials, increased fragility Change of color of paints, wood, plastic parts, glass fiber

It is evident that the investigated causes have a modifying and deteriorating effect over the building.

Based on this table it has been determined that a material which protects from *UV rays, infrared rays, sunlight, water and environmental factors*, serves as protection against all the responsible agents of deterioration on materials used in constructions.

The next step was to determine the parameters a product must classify within to fulfil the standards of a 100% global protector.

The final result was the definition of the (4) four SFR effects “Swiss Formula Repellency”. Conjointly with the physical properties of environmental factors resistance of the Nasa-Coat protector, they complete in a definitive way the required characteristics for a global protection.

The four SFR effects are:

- 1) **UV-SFR effect** (Ultra Violet Swiss Formula Repellency)
- 2) **IR- SFR effect** (Infra Red Swiss Formula Repellency)
- 3) **T- SFR effect** (Thermal Swiss Formula Repellency)
- 4) **W- SFR effect** (Water Swiss Formula Repellency)

Only those products that fulfill the entire specific requirements of these four effects can be qualified as a global protector for the prevention of deterioration on almost any kind of constructions.

In fact, i.e. there are products that prevent the pass of the UV rays. These products absorb the totality of the UV rays and stop them. And because of the absorbency of these materials the covered surfaces are protected and the protector itself suffers the damage caused by the UV rays and after some time it stops protecting. These products do not fulfill the UV- SFR effect requirements.

On the next tables the specifications for each SFR effect are exposed, with the indications of the limits into which the protector must manifest its benefits.

UV - SFR EFFECT (Ultra Violet Swiss Formula Repellency)

Kind of Radiation	Length of wave Nm	Reflection % min	Absorption % max	Penetration % max
UV - A	320 – 400	100	0	0
UV - B	280 – 320	99	1	0
UV - C	320 – 400	95	4	1

IR - SFR EFFECT (Infra Red Swiss Formula Repellency)

Kind of Radiation	Length of wave Micron	Reflection % min	Absorption % max	Penetration % max
Infrared	10 - 1000	75	18	7

TH - SFR EFFECT (Thermal Swiss Formula Repellency)

Contact Material	Reflection % min	Absorption % Max	Penetration % max
Metal	65	25	10
Plastic	80	15	5
Wood	85	12	3
Cement	75	20	5

W - SFR EFFECT (Water Swiss Formula Repellency)

Kind of Contact with Water	Time of contact hours	Penetration of water % max
Puddling	indefinite	0
Rain	indefinite	0
Cleaning	indefinite	0

The global environmental protectors must be within the limits established by the UV- SFR, IR-SFR and W-SFR effects.

The thermal isolator protectors must be within the limits established by the UV-SFR, T-SFR and W-SFR effects.

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Any products which can not accomplish the specified values do not fulfill the SFR effects and cannot be considered as effective and reliable protectors nor thermal isolators or waterproof coatings.

Such products are “commercial lies” taking advantage of the cheap raw materials they use, with their offers, give false hopes and deceive the final user; whereas they will never fulfill the fundamental functions of a real protector and will never keep their promises, and last but not least, will never ever accomplish the offered guarantees.

