

# HUMIDUR<sup>®</sup> FP FAST SPRAY

APPLICATION GUIDE



**HUMIDUR.**



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## COATING APPLICATION

Before coating application, check temperature is at least 3°C above dew point and surface temp does not exceed 50°C. Make sure that the surface is dry (no condensation) and free of contamination.

All Humidur systems are intended to be single coat systems. They are applied straight to the steel or concrete substrate without the use of a primer.

Before application, check if the values in the table to the right are respected. Humidur is able to cure at freezing temperatures.

Before starting spray application, welds and edges are typical areas to be pre-brushed (stripe coating).

## PREHEATING OF CARTRIDGES

Humidur FP requires heating before application. The cartridge requires heating to a min of 50°C for optimal performance. Do not exceed 55°C as this may affect the integrity of the cartridges. If the temperature is not consistent in the cartridge or too low the application spray pattern will be patchy and the risk of damaging the cartridge piston seal increases.

There are numerous ways to heat the cartridges. Common ways to heat cartridges are:

- Hot water bath – Hot water in bucket or electrically heated bath
- Heater blanket – Zone or non rated
- Electric oven warmer – eg pie warmer, travel warmer
- Solar – place on deck or road heat or wrap in black plastic in sun

Refer to Appendix A for Heater Blanket instructions.

Whatever heating method used the aim is to fully heat the product to ensure all the Part A material is uniformly heated. Ensure to check temp with heat gun prior to application

*Note: Do not microwave cartridges, some cartridges may contain metal fittings. Microwave heating does not heat evenly*

## INSTALLING THE CARTRIDGE

Each Fast Spray cartridge is supplied with two static mixers and spray mixing tips. This enables multiple uses where the cartridge is only partially used

### RETAINING NUT AND 'D' PLUG(S)

Remove retaining nut, compression disc and two end-cap(s) from cartridge orifice. *NOTE: Retaining nuts used may sometimes be black in colour.*



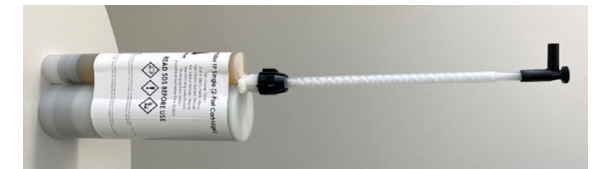
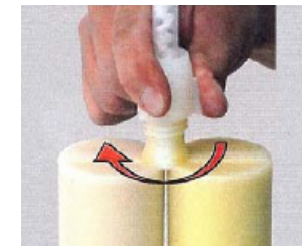
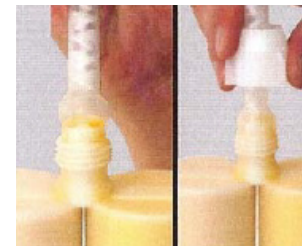
Temp before mixing	50 °C
Application temp of mixture	50 °C
Min surface temp.	Dew point 3 °C
Max surface temp.	50 °C
R.H.	<95%
Humidity of surface	No condensation

### ATTACH STATIC MIXER

Ensure the static mixer bell housing sits flush over the orifice of the cartridge nozzle.

The fitting is deliberately tight. Apply sufficient pressure to ensure the bell housing covers both cartridges necks.

Place retaining nut over static mixer and hand tighten retaining nut securely on to the cartridge thread (do not over tighten).



## INSERTING CARTRIDGE INTO AIR GUN CARTRIDGE HOUSING

Manually retract piston drive rods or activate automatic pressure return on the gun. This allows cartridge to be placed into the gun cartridge housing.



## SPRAY APPLICATOR SETUP

### AIR ATOMISATION AND AIR LINE CONNECTION:

- Connect atomization airline to static mixer spray tip.
1. Connect air compressor hose to dual air regulator kit.
  2. Turn ball valve partially on.
  3. Adjust spray mixing tip position by pushing tip onto mixer then slowly moving forwards until the air sound changes to be unrestricted. A small amount of product will raise in the mixing tube.

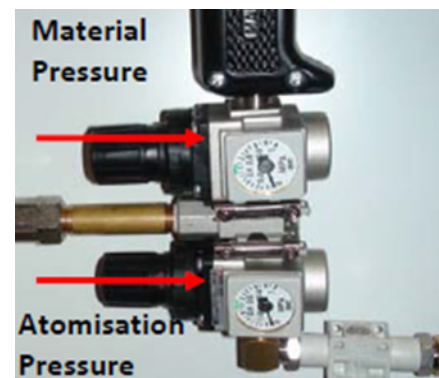
Refer static mixer installation document.

Note: Incorrect tip position will be recognisable by:

- Splatted spray pattern or stream of paint– tip in too close
- Gun piston moves back when trigger is released – tip out too far
- Tip sounds choked – tip in too close



1. Fully turn the material pressure control knob on rear of red gun clockwise No requirement for silver unit.
2. Turn material pressure control (upper knob) on dual air regulator kit to 20 ps, or less to begin
3. Turn atomization pressure control (lower knob) on dual air regulator kit to 20 ps, or less to begin.



## DE-AIR AND CARTRIDGE PHASE IN

1. To achieve correct on-ratio mixing, point cartridges up and slowly dispense material into the static mixer.
2. Tilt cartridges to remove all air pockets.
3. Dispense first 10-20ml of material into a waste container until a uniform mix of material appears from the mixer. Repeat process for all new and partially used cartridges.

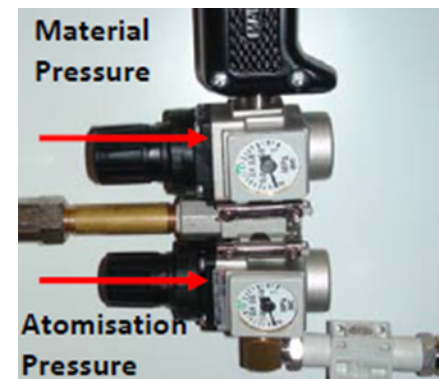


## ADJUST MATERIAL AND ATOMISATION PRESSURE ON DUAL AIR REGULATOR KIT

Adjust both regulators to the their lowest setpoint. Then set 0.2 bar on each regulator. Changes in desired finish and dispense rates can be achieved by varying material and atomisation pressures.

Adjust nozzle pressure and air flow rates before adjusting the piston speed.  
If the product is not heated sufficiently too much material pressure will  
cause the cartridge to leak

Apply the coating preferably by cross-hatching and measure the wet film thickness regularly.



## FILM THICKNESS

Always follow coating ITP or contact Matrix Corrosion Technology concerning the film thickness that should be applied.

A practical limitation for vertical surfaces is 400  $\mu\text{m}$  with maximum being unlimited. If thicker layers are requested, overcoating can be done wet-on-wet. The overcoating time is unlimited.

## INSPECTION

### LAYER THICKNESS

During application it is recommended to check the layer thickness by means of wet film thickness gauges. After sufficient curing of the coating, the layer thickness is checked in conformity with ISO 19840.

Criteria

- Each individual dry layer thickness value less than 80% of the required dry layer thickness is unacceptable.
- The average of all individual dry layer thicknesses should be equal to or more than the specified dry layer thickness.
- The number of measurements between 80% and 100% of the required dry film thickness can at the most amount to 20 % of the total number of measurements.

When the DFT is extremely high, no specific measures should be taken. The quality of the protection will not be affected.

**ADHESION ISO 4624**

Before performing this test, the coating should already be sufficiently cured. The optimal delay, in function of the long term properties, amounts to one month. However after about 7 days, it can already be tested with sufficient certainty.

For applications under aggressive exposure, an adhesion with the substrate of 5 MPa for minimal prep and 8 MPa for optimal is required. This is measured with a hydrodynamic adhesion tester. Failures in the glue or cohesion failures with lower values are rejected. At least three representative measurements are necessary.

## SPARK TEST

Spark tests can be done for discontinuity (holiday) testing of the coating on steel if the conditions allow it. Consult your supplier for recommendations if required.

## CLEAN-UP

Immediately after application of Humidur FP Fast Spray the air should be turned off to the spray ball valve. Retract the product piston by pressing the piston release button located on the hand piece:

1. Silver Guns – Depress and hold yellow button
2. Disconnect air line from the spray mixing tip.
3. Remove the cartridge.
4. If empty dispose of correctly
5. If not empty remove move static mixer, insert plug, disc and locking nut.
6. Wipe gun and store in appropriate location.

## WATER IMMERSION

The Humidur FP products have the ability of curing under water. They can be immersed in water straight after application.

Note that it is possible, as for all epoxy systems, that amine blooming occurs when the wet coating comes in contact with water/moisture. This results in colour changes. However, this has no influence on the performance or durability of Humidur. If reapplying product where moisture may have formed on the surface, rewash with household grade detergent and warm water followed by abrading with abrasive hand pad . Wash with fresh water blow dry followed by reapplication of product.

## DISPOSAL OF WASTE AND SPILLAGE

After application, the product and the packages should be considered as waste. Allow any mixed product to dry then dispose in general waste bin.

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