



## Application Guide

**DC5040** is a water based thin film intumescent coating used to provide fire resistance to engineered wood framing members such as I-Joists. Applied to the Joist only, once the components are installed, DC5040 provides equivalence to the 2 by 10-dimensional lumber prescribed in Section R302.13, Exception 4 of the 2015 IRC® and Section R501.3, Exception 4 of the 2012 IRC®. DC5040 has been fire tested in accordance with a full-scale ASTM E-119 fire test.

**DC5040** meets IAPMO UES Acceptance Criteria EC017 for Field-Applied Fire Protective Coatings and carries UES ER568 for verification by the Authority Having Jurisdiction

**DC5040 is for interior use only.**

Testing	
ASTM E84	Flame Spread 0 Smoke 15
ASTM E119 Full Scale Fire Test of a Floor	Exceeds performance of 2x10 dimensional lumber prescribed in 2015 IRC Section 302.13 or 2012 IRC Section 501.3

Specifications	
Finish	Flat
Color	White
PH	7 +/-1
VOC	37g/L
Solids by Volume	67%
Specific Gravity	1.35 +/-0.1 g/cc
Drying Time	@77°F & 50% R.H. – To touch 1 – 2 hours, to recoat if required 2 to 4 hours
Flashpoint	None
Reducing or Cleaning	Water
Shelf Life	18 months from date of manufacture in unopened containers and stored at 5°C to 35°C (40°F to 95°F). Do not allow to Freeze
Packaging	5 Gal. Pail -Weight 58 lbs. 55 Gal. Drum – Weight 640 lbs.

To confirm the installation complies with IFTI's best practices and is compliant with our Code Evaluation Reports, installer must have copies of all application documents on-site. Installation documents can be downloaded at [www.painttoprotect.com](http://www.painttoprotect.com) or Call IFTI at 949.975.8588 for current copies or with questions

**Surface Preparation:** All surfaces to be coated must be clean, cured, firm, dry and free of dust, dirt, oil, wax, grease, mildew, and efflorescence. The quality of any application is only as good as the surface preparation that precedes the application. Verify the surface is stable, and not crumbling or deteriorated. If any such defects are found, make sure to repair them prior to proceeding.

**Material Preparation:** DC5040 must be thoroughly mixed before application. Failure to do so will seriously compromise the coating's ability to perform. It is required to perform mechanical stirring with a medium speed drill and a paddle appropriate for the size container you are working from. Contents should be stirred from the bottom up making sure to scrape the bottom and sides with a paint stick as you go. Contents should be stirred to a creamy consistency with no lumps. Continue mixing for 3-5 minutes per 5- gallon pail, 15-20 minutes per 55-gallon drum. Thinning is usually not needed. If DC5040 has been exposed to high heat, water may evaporate from the plastic 5-gallon container. If the paint level is below 3 inches from the top of the container, continue to mix and SLOWLY add just enough water to restore a sprayable consistency. Use Caution not to add too much water or product will run and drip during application.

**DC5040 Viscosity:** DC5040 is a 10,000-15,000 viscosity coating at 75°F. When you open a container of DC5040 it may appear thick before it is mixed, ensure proper temperature and remix for 3-5 minutes to return it to the 10,000-15,000 viscosity.

**Temperature:** PROTECT FROM FREEZING DURING SHIPMENT, STORAGE, AND USE. DC5040 is water based coating which will freeze and become unusable at temperatures below 32°F. Do Not store material at temperatures below 40°F. Do Not apply DC5040 when ambient air and substrate temperatures fall below 50° F. Store DC5040 at 40°F to 95°F at all times. Do Not store DC5040 on concrete floors during winter months. IFTI recommends an ideal installation temperature range of 62°F to 90°F. Contact IFTI for applications outside these temperature ranges.

**Humidity:** Relative humidity plays an equally important role in how well DC5040 cures. Ideal conditions are 50-65% relative humidity. Curing times are significantly affected when humidity levels exceed 70%. Low relative humidity can also be a problem, because DC5040 may dry too quickly and lead to blistering on the surface. It is imperative that humidity is monitored throughout the application and curing process. 65% humidity at the beginning of the job will quickly rise as the coating is installed. Continue monitoring humidity as the coating cures until equilibrium is achieved.

**Ventilation:** Fans may be required to circulate the air during application, especially in high or low humidity. Air flow must be across the area DC5040 was applied, but not directly on it. If the relative humidity is greater than 85% at the end of spraying and cross ventilation is not drastically reducing it, then a mechanical industrial dehumidifier is required.



# International Fireproof Technology Inc.

The Ultimate in Firestop Solutions and Fire Protective Coating

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949-975-8588

**IMPORTANT-** when spraying in enclosed or unconditioned spaces, such as basements or in buildings with non-operable HVAC it is mandatory to use an “exhaust” blower at one end of the enclosed space and run a hose to the exterior of the building for removing stale air. Use a “supply” blower at the opposite end of the enclosed space and a hose from the exterior to maintain a negative pressure compared to the surrounding area, maintaining at least 0.3 air changes per hour for 48-72 hours following application.

Improper installation practices that do not address temperature, humidity and ventilation will void the warranty. Contact IFTI at 949.975.8588 or email [ptp@painttoprotect.com](mailto:ptp@painttoprotect.com)

**Application Equipment:** DC5040 is best applied with an airless sprayer to achieve a more consistent mil thickness. In challenging areas where an airless sprayer is not practical, DC5040 can be applied by brush or roller (See table for a list of recommended sprayers).

Recommended Sprayers	
Pump:	Graco UltraMax795 or equivalent
PSI:	3000
GPM:	1.00
Tip:	517 - 521 or equivalent.
Filter:	60 mesh at machine, if present remove filter from gun
Hose:	3/8" diameter airless spray line for the length of hose from pump and 1/4" x 6' whip at gun
Pump:	Graco TexSpray Mark 5 or equivalent
PSI:	3300
GPM:	1.35
Tip:	517 - 523 or equivalent.
Filter:	60 mesh at machine, if present remove filter from gun
Hose:	3/8" diameter air less spray line for the length of hose from pump and 5/16"x 6' whip at gun
Pump:	Graco GH 833 or equivalent
PSI:	4000
GPM:	4.0
Tip:	517 - 529 or equivalent.
Filter:	60 mesh at machine, if present remove filter from gun
Hose:	1/2" diameter airless spray line for the first 100'-250', 3/8"diameter air less spray line for the rest and 5/16" X6; whip

**Proper equipment and settings** are imperative for correct application. Install a 60 mesh filter in machine and remove filter from gun if present. DC5040 requires high pressure to atomize the coating at the spray tip, correct atomization will yield a more consistent spread rate and easier coverage of uneven surfaces. Using the table, ensure you match your tip size to your machine - this is critical to ensure correct pressure at the spray tip. If the spray pattern has fingers or tails, then the pressure should be increased. If the maximum pressure of the sprayer is not enough to achieve a good spray pattern, a spray tip with a smaller orifice should be used.

A good spray pattern indicates that the paint or coating is completely atomized and distributed evenly on the surface. Hose length should be appropriate for your machine and always ensure your feed hose is larger than your whip. Having a smaller whip will serve to re-pressurize the coating at the spray gun and assist in correct atomization of the coating.

**Spraying DC5040 for Maximum Yield:** If this is the first time using DC5040 we suggest testing a pre-measured area to get a feel for spraying and yield. Example, if the job requires 26 wet mils or 62 ft<sup>2</sup> per gallon, then a 5-gallon pail would cover 310 ft<sup>2</sup>. Measure out one or two 310 ft<sup>2</sup> sections using pieces of tape, thumbtacks, or canned spray paint. Use just enough to outline the area you intend to apply DC5040. We suggest spraying inside the outlined area and taking wet film thickness measurements, with a wet film gauge across the area, to get a feel for maximum yield.

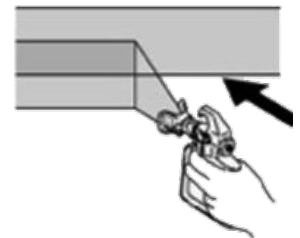
**Coverage:**

Check appropriate test or Evaluation report for required wet film thickness (WFT) and gallon per square coverage. DC5040 is

Wet Film	Sq. Ft. Per Gallon	Sq. Ft. Per Five Gallon
26 mils WFT	62 Sq. Ft. Per Gallon	310 Sq. Ft. Per Five Gallon

Actual coverage rate will vary based on surface texture, over-spray, and miscellaneous losses. Allow a minimum of 5-10% for over-spray and losses.

**Overlapping Technique:** The overlapping technique ensures that an even amount of coating was sprayed onto the surface. The spray gun should be aimed so that the tip points at the edge of the previous stroke, therefore overlapping each stroke by 50%. To maximize efficiency when spraying on broad or open surfaces (e.g. ceilings and bare walls), the outside edges of walls should be sprayed first. The middle can then be sprayed quickly requiring less precise strokes. Given the contour of SPF we suggest spraying side to side followed by an up and down stroke.



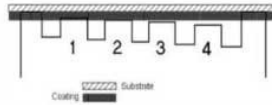


## Measuring Wet Film Thickness(WFT)

Figure 1



Figure 2



**How to Use a Wet Film Thickness Gauge:** A WFT gauge is designed to give the spray applicator immediate mil measurement of the film build just been sprayed.

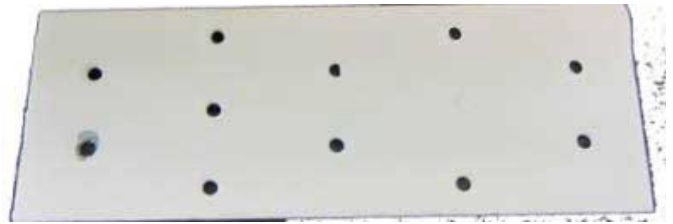
**Technique:** When placing the gauge on a freshly painted area, the gauge must be placed at a 90-degree angle to the substrate and pressed firmly to ensure correct depth. The applicator also needs to be aware of variations in the surface that may influence the reading. For example, if the surface is not perfectly flat, one direction may give a more accurate reading than the other.

To use the WFT gauge, place the gauge directly on the wet area just sprayed as described above. See figure 2, the notches will indicate the measured film thickness. For example, if the 18-mil notch is wet and the 20-mil notch is dry, then the wet measured thickness is 18mils.

**Job Work Records** must be completed for all projects, these are an excellent way to track your installations and confirm compliance to your Building Official or Authority Having Jurisdiction. In the event of a concern on a job the installer can provide documented proof of the installation.

**Job Site Labels** must be applied to a conspicuous area of the job site following the installation of DC5040.

**Medallions:** For Wet Film Thickness verification and ease of measuring the applied coating, IFTI suggests placing metal plates (aka Medallions) to the surface of the I-Joist, at least one per 400 sq. ft. These plates are available at most hardware stores. IFTI recommends writing the job date and applicator name on the back of each plate. Measuring WFT on the front side of the plate will give the most accurate reading. Collect these plates at the end of the job, touch up, and keep them on file or at the job site. They are a great tool to present your code official or Fire Marshal and verify the applied thickness of coating.





**INTERNATIONAL FIREPROOF TECHNOLOGY INC.**  
The Ultimate in Fire Protection 949.975.8588

### Job Site Label

Job Address: \_\_\_\_\_

Product: \_\_\_\_\_ Substrate: \_\_\_\_\_

WFT Measured : \_\_\_\_\_

Company: \_\_\_\_\_

Phone: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_



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**Limitations: DC5040 is for interior use.**

## **Limited Warranty:**

To validate warranty, Job Work Records must be filled out for all applications of DC5040. Completed Work Records can be submitted to [workrecords@painttoprotect.com](mailto:workrecords@painttoprotect.com) within 10 Days of Job Completion.

This product will perform as tested if applied and maintained according to our directions, instructions and techniques. If this product is found to be defective upon inspection by its representative, the seller will, at its option, either furnish an equivalent amount of new product or refund the purchase price to the original purchaser of this product. Seller will not be liable for any representations made by any retail seller or applicator of the product. **THIS WARRANTY EXCLUDES (1) LABOR OR COST OF LABOR FOR THE APPLICATION OR REMOVAL OF THIS PRODUCT OR ANY OTHER PRODUCT, THE REPAIR OR REPLACEMENT OF ANY SUBSTRATE TO WHICH THE PRODUCT IS APPLIED OR THE APPLICATION OF REPLACEMENT PRODUCT, (2) ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. OTHER LIMITATIONS APPLY.**

For the complete terms of the limited warranty, go to [www.painttoprotect.com](http://www.painttoprotect.com). Some states/provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. To make a warranty claim, write to Technical Service: International Fireproof Technology, Inc. 17528 Von Karman Avenue  
Irvine, CA 92614

Or email Customer Service at [ptp@painttoprotect.com](mailto:ptp@painttoprotect.com) **General Safety, Toxicity, Health Data**

Safety Data Sheets (SDS) are available on this coating material. Any individual who may come in contact with these products should read and understand the SDS. In case of emergency contact CHEMTREC EMERGENCY NUMBER at 800-424-9300.

**WARNING:** Avoid eye contact with the liquid or spray mist. Applicators should wear protective clothes, gloves and use protective cream on face, hands, and other exposed areas.

**EYE PROTECTION:** Safety glasses, goggles, or a face shield are recommended.

**SKIN PROTECTION:** Chemical resistant gloves are recommended, cover as much exposed skin area as possible with appropriate clothing.

**RESPIRATORY PROTECTION is MANDATORY!**

Respiratory protective equipment, impervious foot wear and protective clothing are required at all times during spray application.

**INGESTION:** Do not take internally.

Consider the application and environmental concentrations in deciding if additional protection is necessary.