

Dur-A-Flex, Inc.

95 Goodwin St.
East Hartford, CT 06128
1-800-253-3539

SHOP FLOOR EPOXY FLOORING

DESCRIPTION

SHOP FLOOR EPOXY FLOORING is 1/16" to 3/16" combination of "colored" Dur-A-Glaze Shop Floor, a 100% solids epoxy formulation, and Ottawa Flintshot, a natural quartz sand. The surface texture can be standard non-skid, orange peel or smooth finish. It can be applied on most any type of sound substrate including concrete, quarry tile, brick pavers, steel decks, plywood floors, etc. Dur-A-Flex's exclusive, clear, two-component epoxy, DUR-A-GLAZE, is the secret for the success of this flooring system. SHOP FLOOR EPOXY FLOORING is similar in application technique, durability and chemical resistance as the time tested Dur-A-Quartz "BM" Epoxy Flooring. It is not quite as decorative but it is more economical because it utilizes less expensive, locally available, Ottawa Flintshot quartz sand instead of the more decorative Q28 Colored Quartz. Outstanding features are:

- Excellent Color Uniformity
- Rapid Hardening
- Good UV Resistance
- No Odor
- Meets USDA, OSHA, FDA and EPA Standards
- Superior Adhesion
- Desirable Viscosity
- Choice of: Regular, Cold Cure, Damp Primer, UV, CR-4, Fast, Water Clear, Kitchen or Novolac
- Superior Chemical Resistance
- Cures Blush-free (no exudation)
- Applies Without Cratering
- Easy to Use 2:1 Mix Ratio
- Applies Bubble-free
- Low Irritation Potential
- Competitively Priced

TYPICAL USES

- Laboratories
- Garages
- Meat Preparation Areas
- Canning Plants
- Battery Plants
- Food Processing Plants
- Pharmaceutical Plants
- Dairies
- Auto Service Areas
- Cheese Plants
- Chemical Plants
- Bottling Plants
- Commercial Kitchens
- Walk-in Coolers

- Industrial Plants

BENEFITS

- Low initial installation cost.
- Very neat, uniform surface appearance. No trowel marks.
- Lowers maintenance costs. Very easy to keep clean.
- Nearly indestructible. Most durable of all epoxy flooring materials.
- Installs and cures rapidly, short “downtime” period.
- Easy to keep sanitary due to its stain resistant, non-porous, seamfree surface, with integral coved base if specified.

COLORS

Common colors are Tile Red and Slate Gray. However, any standard DUR-A-GARD color is available.

(Refer to color chart in “Dur-A-Gard Floor and Wall Epoxy” Snapshot.)

THICKNESS AND WEIGHT

SHOP FLOOR EPOXY FLOORING can be installed as a single or a double broadcast application.

Single Broadcast - approximately 1/16" thick weighs .65 lbs. per sq. Ft. (Light traffic)

Double Broadcast - approximately 1/8" thick weighs 1.25 lbs. per sq. Ft. (Heavy traffic)

Triple Broadcast - approximately 3/16" thick weighs 1.75 lbs. per sq. Ft. (Extra Heavy Duty)

LIMITATIONS

Substrate and ambient temperature must be higher than 50°F during installation and curing period. NOTE: “Cold Cure” version will cure at lower temperatures but some discoloration may occur.

SURFACE PREPARATION - Surface must be dry and perfectly clean, free of all oil, grease, detergent film, sealers and/or curing compounds in accordance with “Preparation Guidelines” in “Preparation/Application Details” Showcase.

APPLICATION PROCEDURE AND SPREAD RATES

A single broadcast application will result in an approximate 1/16" thickness. A double broadcast application will result in a more uniform appearance and an approximate 1/8" thickness.

1. Prepare the surface as recommended.
2. Apply Dur-A-Glaze Shop Floor at approximately 100 sq. ft. per gallon.
3. Broadcast Flintshot sand at 1/2 lb. per sq. ft.
4. Apply Dur-A-Glaze Shop Floor at approximately 100 sq. ft. per gallon. This application serves as a first top coat or a base coat for a second broadcast.
5. A. Double Broadcast Application: Broadcast Flintshot sand at 1/2 lb. per sq. ft.
B. Single Broadcast Application: If needed, apply a second top coat of Dur-A-Glaze Shop Floor at 200 sq. ft. per gallon. NOTE: One top coat is sufficient where a high degree of non-skid is required. Example: shower rooms, meat cutting rooms, oily plant floors, etc. An additional top coat is often required for areas such as locker rooms, toilet, laboratories, clean rooms, etc.
6. Double Broadcast application: Repeat Steps #4 and #5b.

ESTIMATING

Actual coverage will depend on the required thickness, surface profile, and application techniques.

PHYSICAL PROPERTIES (Shop Floor Epoxy Flooring)

Mix Ratio (Dur-A-Glaze)... 1 part Hardener, 2 parts Resin by volume

Pot Life... approximately 22 minutes at 70°F

Hardness, Shore D... ASTM D-2240... 75-80

Compressive Strength... ASTM D-695... 17,500 psi

Tensile Strength... ASTM D-638... 4,000 psi

Tensile Elongation... ASTM D-638... 7.5%

Flexural Strength... ASTM D-790... 6,250 psi

Linear Shrinkage... ASTM D-2566... 0.02%

Coefficient of Linear Expansion... 12°F to 140°F

in/in/degrees F... ASTM D-696... 20×10^{-6}

Bond Strength to Concrete... ACI-403... 335 psi, concrete fails

Shear from Steel Plate... MIL D-3134... 1,050 psi

Indentation... MIL D-3134... 025 max.

Impact Resistance... MIL D-3134... no cracking or delamination

Elevated Temperature... MIL D-3134... no slip or flow

Water Absorption... ASTM D-570... 0.04%

Electrical Conductivity... non-conductive

Flammability... ASTM D-635... self extinguishing

Abrasion Resistance Taber Abrader... CS-17 Wheels, 2000 gm. load, 1000 cycles... avg. 24.0 mg. loss

Toxicity... non-toxic, USDA approved

*Pot life is shorter at higher temperature. Do not use below 50°F or above 95°F.

*Resistance can be improved by using Poly-Thane as a topcoat(s).

NOTE: Testing should not be conducted until coating cures 7 - 10 days at 70°F

Before using any Dur-A-Flex, Inc. product, be sure the Material Safety Data Sheet is read and understood.

DUR-A-GLAZE #4 CR-4

DESCRIPTION

DUR-A-GLAZE #4 CR-4 is a light amber, transparent two-component liquid formulation composed of 100% solids thermosetting epoxy resins designed specifically for most applications requiring resistance to most solvents, organic and inorganic acids, and caustics at temperatures to 80°F. ***DUR-A-GLAZE#4 CR-4*** is designed for use as a coating, or as the matrix resin in a ***SHOP FLOOR*** or ***DUR-A-CRETE FLOORING SYSTEM***, and as a topcoat for these systems.

BENEFITS

- Long Pot Life
- No Induction Time is Needed
- Excellent Chemical Resistance
- Good low temperature cure to 40°F
- Safer than Aromatic Amines
- Excellent Resistance to Amine Blush and Water Spotting

PRECAUTIONS

Consult the Material Safety Data Sheet for ***DUR-A-GLAZE #4 CR-4*** for appropriate handling procedures and personal protective equipment.

PHYSICAL PROPERTIES

Appearance hardener & resin combined... Transparent, light amber liquid
Mix Ratio... 1 part Hardener, to 2 parts Resin
Pot Life, in mass @ 70°F... 45-55 minutes, 3 oz. slug
Viscosity @ 70°F mixed (cps)... 450 - 550
Weight per gallon, hardener... 8.85 lbs.
Weight per gallon, resin... 9.23 lbs.
Thin film set time @ 70°F... 5 - 7 hours
Hardness, Shore D... 75 - 80
Cured Film Thickness... 5 - 15 mils
Compressive Strength @ yield (psi)... ASTM D695... 10,300
Tensile Strength... ASTM D638... 7600
Tensile Modulus... ASTM D638... 3.9
Tensile Elongation @ break (%) ... ASTM D638... 3.0
Flexural Strength (psi)... ASTM D790... 15,500
Flexural Modulus (10 psi)... ASTM D790... 5.0

COLORS

Refer to color chart in “Dur-A-Gard Floor & Wall Epoxy” Snapshot.

Note also that most nitrogenous materials, as well as some metal salts and dyes may stain the floor without compromise of the system's structural integrity. These compounds are noted by #. This is a partial list of chemicals tested on the DUR-A-GLAZE #4 CR-4. If information is needed on other chemicals, please call Dur-A-Flex, Inc. Technical Service at 1-800-253-3539, or in CT 528-9838.

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SECTION 09670 or 09700

PART 1 GENERAL

1.01 SCOPE

- A. Provide all labor and materials for a seamless, industrial, epoxy flooring material, including all surface preparation, primers, and finish coats.
- B. Related work specified elsewhere:
 - 1. Concrete - Division 3
 - 2. Thermal & Moisture Protection - Division 7

1.02 ACCEPTABLE MANUFACTURER AND INSTALLER

- A. DUR-A-FLEX, Inc. 1-800-253-3539
- B. Manufacturer approved Installer, who has technical qualifications, currently certified in writing, and facilities to install specified systems.

1.03 DELIVERY AND STORAGE

- A. Material shall be delivered to job-site in clean, clearly labeled containers and inspected by installer prior to start of job.
- B. Material shall be stored in a dry, enclosed area protected from the elements. Temperature of storage area shall be kept between 60° and 90°F.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. New concrete shall be cured no less than 28 days under good conditions. Concrete subfloors

- on or below grade shall be properly equipped with vapor barriers and perimeter drains.
- B. Adequate utilities, including electric, water, heat (between 60° and 90°F) and lighting of no less than 80 ft. candles measured at floor surface to be supplied by Owner/General Contractor.
- SPECIFIER NOTE: Heat and light are extremely important parts of the installation. Usually these utilities are functioning before epoxy finishes are scheduled for installation, however in some cases the epoxy coating shall be installed prior to equipment, fixtures and even walls in some cases. Lack of these necessities can and will spoil a good installation. Without heat the curing process can be extended or even stopped. Without adequate light even the best mechanic cannot provide a quality finish.**
- C. Work area shall be free of other trades during, and for a period of 24 hours, after floor installation.
- D. Protection of finished floor from damage by subsequent trades is the responsibility of [Installer] [Owner] [General Contractor].

1.05 WARRANTY

- A. Contractor to submit a [one] year warranty against defects in material and workmanship upon completion of installation.

PART 2 PRODUCTS

2.01 PRODUCT DESCRIPTION

[1/16"] [1/8"] [3/16"] [SHOP FLOOR] [SHOP FLOOR CR4] Multiple-component, Heavy Duty, industrial flooring system as manufactured by DUR-A-FLEX INC. **1-800-253-3539.**

2.02 PHYSICAL PROPERTIES

[Insert technical data from the appropriate product data sheet]

2.2 PRODUCT PACKAGING

- A. All materials used shall be precision mixed on site with manufacturer supplied mix and measure apparatus to ensure a timely, accurate mix ratio and minimize waste.

PART 3 EXECUTION

3.01 PREPARATION

- A. Concrete preparation to include use of [a steel shotblast machine] [a solution of muriatic acid] to create a profiled substrate, combined with “dust-free” diamond grinding for all edges and areas where shotblast machine is unable to reach.

SPECIFIER NOTE: For maximum bond strength, steel shotblasting is always recommended. See “Preparation/Application Details” Showcase for details on specific substrates.

3.02 PRODUCT INSTALLATION

- A. Floor installation shall strictly adhere to manufacturer’s current written instructions.
- B. Apply 16 mil flood coat of Shop Floor with a notched squeegee and back-roll with a quality non-shed roller.
- C. Broadcast natural quartz to excess, and allow to cure.
- D. Sweep up excess Natural Quartz.
- E. Repeat steps B & C.
- F. Apply first top coat of Shop Floor at 100-125 sq. ft. per gallon, allow to cure.
- G. Apply finish coat of Shop Floor at the rate of 200 square feet per gallon.
- E. All garbage and debris shall be properly disposed of.

SPECIFIER NOTE: DUR-A-FLEX broadcast flooring systems are a relatively simple combination of 100% solids epoxy and colored quartz. Selecting the proper type of epoxy will require some owner input. Specify Shop Floor "Reg" - for general use, UV - for exterior or areas with high intensity lighting, Kitchen - for areas subject to thermal shock and boiling oils, CR4 - for moderate chemical resistance, Novolac - for harsh chemical resistance and constant heat exposure.

PERFORMANCE TOPCOATS can be specified to increase cleanability, gloss retention, chemical resistance, stain resistance. (See "High Performance Topcoats" Snapshot.)

3.03 DETAILS

- A. Moving cracks and joints shall be thoroughly routed and vacuumed clean, then filled with DUR-A-FILLER #2.
- B. Surface deviations to be pre-patched with patching compound comprised of DUR-A-GLAZE #4 and No-Sag #2 or Q28 Quartz.
- C. A 4" integral cove base to be installed at perimeter walls.
- D. Prime surface with Elast-O-Coat membrane as per manufacturer's recommendation.