Dow Epoxy

Offering Solutions for Civil Engineering Needs

INNOVATIVE PRODUCTS AND TECHNOLOGY

A Robust Toolbox for Civil Engineering Needs

With a heritage built on more than 50 continuous years in the industry, Dow Epoxy continues to be the reliable leader in innovative product and technology solutions. As part of its innovation leadership, Dow has developed a robust portfolio of epoxy products for the civil engineering industry. Included are basic epoxy components, specialty resins, resin blends and hardeners to help meet specific application requirements.

In addition to providing one of the broadest epoxy offerings for civil engineering applications today, our epoxy innovation pipeline – part of Dow's $1.6 billion annual investment in research & development – ensures that the epoxy products your industry will require tomorrow are being created by Dow today. Low emission curing agents from Dow are just one example of the pioneering technology resulting from our continued investment in research and development.

Beyond technology development, we are also a source of technical support to help you apply our solutions effectively so your customers achieve their desired results. Our comprehensive service model gives you access to local know-how and support and world-class resources. Dow leadership in epoxy technology spans half a century, with a legacy of innovative technology, high quality products and attention to customer service that we carry forward today. Our commitment to the epoxy civil engineering industry includes adhering to the highest standards for safety in the manufacture, storage, transport, use and disposal of our products.

High Performance Products

Dow Epoxy products are available for a wide range of civil engineering, infrastructure and other building & construction applications. Selection of the proper Dow Epoxy curing agent (hardener) is the starting point for development of formulations with the viscosity, reactivity, gel time, cure rate, chemical resistance, wear resistance, adhesion, flexibility and other properties required to meet your specific formulating, application and end-use requirements.

Use the chart below to identify products best suited to meet your requirements.

Recommended D.E.H.™ Products for Your Civil Engineering Applications

Curing Agent Grade	Concrete Primers	Self Leveling Flooring	Trowelable Flooring	Industrial Flooring	Grouts & Mortars	Crack Repair - Injection	Crack Repair - Patch	Secondary Containment
D.E.H.™ 487		•						
D.E.H.™ 488	•	•		•				
D.E.H.™ 502		•		•				•
D.E.H.™ 512			•		•		•	
D.E.H.™ 530		•		•				•
D.E.H.™ 534		•	•		•			•
D.E.H.™ 545	•							
D.E.H.™ 554	•							
D.E.H.™ 561					•	•		
D.E.H.™ 583		•	•					
D.E.H.™ 589		•	•					
D.E.H.™ 598B				•		•		
D.E.H.™ 613								•
D.E.H.™ 614								•
D.E.H.™ 615								•
D.E.H.™ 800	•			•				
D.E.H.™ 802	•			•				
D.E.H.™ 804		•						

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GLOBAL PRESENCE

Industrial and Commercial Flooring Applications

Industrial and commercial flooring applications are a major focus of Dow Epoxy products. Epoxy hardeners from Dow can be used to address your customers' most important flooring performance requirements. They can provide…

- Resistance against water spotting for more attractive and easily maintained finished floors.
- Protection against chemical blushing to improve floor aesthetics.
- Low temperature curing capabilities to extend the floor application season.
- Extended pot life to enable easier application and reduce waste.
- Rapid cure capabilities to speed project completion.

D.E.H.™ Curing Agents for Civil Engineering Applications – Typical Properties[1]

Product	Type	AHEW (g/eq)	Viscosity (mPa•s@25°C)	Gel Time (min)*	Typical Applications	Specific Performance Attributes
D.E.H.™ 487	Modified Cycloaliphatic Amine	93	170 - 270	41	High-filled self-leveling coating systems, mortars, highly stressed industrial floorings	Non-blushing, low viscosity, chemical resistance
D.E.H.™ 488	Modified Cycloaliphatic Amine	93	280 - 380	25	High-filled self-leveling coating systems, mortars, highly stressed industrial floorings	Resistance to water spotting, non-blushing, chemical resistance
D.E.H.™ 502	Modified Aliphatic Amine	44	2500 - 4000	13	Adhesives, laminates, flooring	Chemical resistance, fast cure
D.E.H.™ 512	Modified Aliphatic Amine	86	150 - 350	9	Fast-setting adhesives, flooring, high solid coatings, patching compounds, repair mortars, accelerator, injection repair compounds	Low viscosity, fast cure
D.E.H.™ 530	Modified Cycloaliphatic Amine	112	300 - 400	42	Self-leveling flooring, decorative tile grouts, high solids coatings, concrete sealers, chemical resistant tank linings	Non-blushing
D.E.H.™ 534	Modified Cycloaliphatic Amine	120	500 - 1000	18	Industrial flooring, sealers, primers, grouts, mortars, tank lining for metal and concrete substrates, curing accelerator	High gloss
D.E.H. ™ 536	Modified Cycloaliphatic Amine	116	750 - 1250	14	Concrete sealers, self-leveling flooring, trowelable flooring, high solids coatings	Color stability
D.E.H.™ 545	Amidoamine Adduct	115	400 - 650	39	Epoxy aggregate, solvent-free or high solids coatings, tank linings for metal and concrete substrates, primer for dry and wet concrete substrates	Excellent adhesion on wet concrete
D.E.H.™ 554	Modified Cycloaliphatic Amine	86	60 - 80	38	Self-leveling flooring, concrete sealers, high solids coatings	Low viscosity, high gloss
D.E.H.™ 561	Modified Cycloaliphatic Amine	85	40 - 100	17	Self-leveling flooring, solvent-free and high solids coatings, injection repair compounds, mortar binders for concrete patching in flexibilized systems	Low viscosity
D.E.H.™ 580	Modified Cycloaliphatic Amine	112	300 - 400	42	Concrete sealers, industrial flooring, high solid coatings, tank linings	Resistance to water spotting, non-blushing
D.E.H.™ 582	Modified Cycloaliphatic Amine	95	250 - 600	22	Industrial flooring, sealers, primers, tank linings	Resistance to water spotting, non-blushing, chemical resistance
D.E.H.™ 583	Modified Cycloaliphatic Amine	95	250 - 600	37	Industrial flooring, sealers and primers, tank linings	Non-blushing
D.E.H. ™ 584	Modified Aliphatic Amine	86	30 - 60	150	Castings, adhesives, concrete sealers, flooring, high solid and solvent-free coatings	Long pot life
D.E.H.™ 589	Modified Cycloaliphatic Amine	83	50 - 100	23	Industrial flooring, sealers and primers, tank linings	Low viscosity, non-blushing
D.E.H.™ 598B	Modified Aliphatic Amine	75	50 - 200	16	Concrete patch, grouts, mortars, crack injection, industrial flooring, sealers and primers, tank linings	Low temperature cure, resistance to water spotting, non-blushing, good chemical resistance

*with D.E.R. ™ 331 Epoxy Resin

[1]Typical properties, not to be construed as specifications

Low Emission Curing Agents

Innovative, emissions-minimized D.E.H.™ hardeners from Dow Epoxy are formulated without alkyl-substituted phenol and benzyl alcohol, facilitating low volatile organic compound (VOC) coating and flooring formulations. These next generation products for the civil engineering market are ideal where low odor and low emissions are critical. Low emissions are especially important in schools, hospitals, and other indoor spaces where inhabitants and users experience prolonged exposure to flooring emissions.

D.E.H.™ Low Emission Curing Agents for Civil Engineering Applications – Typical Properties[1]

Product	Type	AHEW (g/eq)	Viscosity (mPa•s @25°C)	Gel Time (min)*	Typical Applications	Specific Performance Attributes
D.E.H.™ 613	Mannich Base	90	900 - 1300	8	Water resistant and chemical resistant for civil engineering applications	Low temperature cure, non-blushing
D.E.H.™ 614	Mannich Base	85	450 - 750	13	Water resistant and chemical resistant for civil engineering applications	Low temperature cure, non-blushing
D.E.H.™ 615	Mannich Base	75	400 - 500	15	Water resistant and chemical resistant for civil engineering applications	Low temperature cure
D.E.H.™ 622	Modified Cycloaliphatic Amine	60	490 - 690	5	Chemical anchor systems and adhesives	Low temperature cure, not manufactured with nonyl-phenol
D.E.H.™ 4909	Modified Polyamine	83	180 - 280	41	Primers for concrete and civil engineering applications	Low temperature cure, not manufactured with nonyl-phenol
D.E.H.™ 2720	Modified Cycloaliphatic Polyamine	190	3000 - 4200	9	Mortars, tooling and adhesives	Low temperature cure, good adhesion on mineral substrates, not manufactured with benzyl alcohol or alkyl phenol
D.E.H.™ 4912	Modified Polyamine	84	280 - 480	34	High filled mortars and concrete primers	Low temperature cure, excellent wetting of concrete, not manufactured with alkyl phenol

*with D.E.R. ™ 331 Epoxy Resin

[1]Typical properties, not to be construed as specifications

LOW EMISSION PRODUCTS

Waterborne Curing Agents

The next-generation D.E.H.™ waterborne series hardeners have been developed with very low odor, increased water-vapor permeability, rapid drying and curing, and processing ability at lower temperatures. These 800 series D.E.H.™ products can be used with waterborne epoxy resins as well as standard epoxy resins to create concrete coatings with low VOC content. Useful applications include flooring and indoor locations where organic solvents need to be avoided.

D.E.H.™ Waterborne Curing Agents for Civil Engineering Applications – Typical Properties[1]

Product	Type	AHEW (g/eq)	Viscosity (mPa•s@25°C)	Gel Time (min)*	Typical Applications	Specific Performance Attributes
D.E.H.™ 800	Polyamine adduct based curing agent, dissolved in water	300	7500 ± 2500	120	Coatings on concrete substrates and cement based systems	No solvents, very low odor and fast drying
D.E.H.™ 802	Polyamine adduct based curing agent, dissolved in water	300	5000 ± 2000	110	Coatings on concrete substrates and cement based systems. Special rheology profile, and ideal for roller applications	No solvents, very low odor and fast drying
D.E.H.™ 804	Polyamine adduct based curing agent, dissolved in water	175	8000 ± 3000	50	Self leveling flooring and mortars	No solvents, very low odor and fast drying

*with D.E.R. ™ 331 Epoxy Resin
[1]Typical properties, not to be construed as specifications

Epoxy Resins for Civil Engineering and Infrastructure

In addition to our portfolio of curing agents, Dow also offers a full range of epoxy resins to complete your two-part systems. The most frequently used resins for building & construction applications include…

Liquid Epoxy Resins

Product	EEW (g/eq)	Viscosity (mPa•s@25°C)	Description
D.E.R.™ 331	182 – 192	11000 – 14000	A widely used, general purpose liquid epoxy resin based on bisphenol A. It is recognized as a standard from which many variations have been developed.
D.E.R.™ 324	195 – 204	600 – 800	D.E.R. 324 liquid epoxy resin offers low viscosity and low surface tension. The low surface tension explains why this resin wets the surface better, gives better adhesion and will have slightly lower viscosity at any given filler loading. The diluent increases pot-life, flexibility (impact resistance) and acid resistance, but limits the solvent resistance. D.E.R. 324 liquid epoxy resin is prone to crystallization.
D.E.R.™ 321	180 – 188	500 – 700	Diglycidylether of bisphenol A/CGE
D.E.R.™ 354	167 – 174	3400 – 4200	Standard bisphenol F based epoxy resin of low viscosity, used for solvent-free coatings, concrete reinforcements, adhesives, electrical insulation and filament winding. This resin can provide improved resistance performance against solvents compared to standard bisphenol A liquid epoxy resins.
D.E.R.™ 352	172 – 181	5700 – 7700	D.E.R. 352 liquid epoxy resin is a low viscosity (reactive) diluent-free epoxy resin. D.E.R 352 liquid epoxy resin combines the performance properties of standard bisphenol A liquid epoxy resin with the low viscosity of bisphenol F liquid epoxy resin.
D.E.R.™ 353	190 – 200	800 – 1000	D.E.R. 353 liquid epoxy resin is a low viscosity epoxy resin with a very low crystallization tendency. The performance of D.E.R. 353 in ambient cure formulations is similar to those obtained when using the D.E.R 324 liquid epoxy resin.

Epoxy Resin Solutions

Grade	EEW (g/eq) on solids	Viscosity (mPa•s@25°C)	Description
D.E.R.™ 671-X75	430 – 480	7500 – 11500	Solution of D.E.R 671 in xylene

For additional epoxy resins and hardeners visit the Dow Epoxy Product Finder at www.dowepoxy.com

Dow Epoxy

Solutions for Civil Engineering Needs

Product Stewardship

The Dow Chemical Company has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis of our Product Stewardship philosophy by which we assess the health and environmental information on our products and then take the appropriate steps to protect employee and public health and the environment. The Dow Chemical Company has enduring commitments to Responsible Care® in the management of chemicals worldwide. Our Product Stewardship program rests with every individual involved with Dow products from the initial concept and research to the manufacture, sale, distribution, and disposal of each product.

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Form No. 296-01968-0412 AMS