INDUSTRIAL Grouts, Epoxies & Mortars

Ideal applications:
- Industrial Manufacturing
- Chemical Processing
- Pulp, Paper & Wood; Lumber Operations and Converting Plants
- Electric Power Generation
- Petroleum Refining; Hydrocarbon Processing Industry
- Metal & Minerals; Mines, Processing Plants & Mills
- Food & Beverage; Processing & Distribution/Storage Facilities
- Pharmaceutical & Biotech Industry
- Onshore Oil & Gas Processing

If you need more information on our complete line of industrial grouts, epoxies and mortars, here are four quick and easy access points:
- Visit our comprehensive website: www.wrmeadows.com
- Contact W. R. MEADOWS, INC. via email: info@wrmeadows.com
- Call toll free: 1-800-342-5976
- Fax: 1-847-683-4544

FOLLOW US

W. R. MEADOWS, INC.
P.O. Box 338  •  HAMPSHIRE, IL 60140-0338
Phone: 847/214-2100  •  Fax: 847/683-4544
www.wrmeadows.com
info@wrmeadows.com
W. R. MEADOWS is your single-source solution for all your plant maintenance and equipment needs, whether new construction or retrofit. Our line of products includes grouts, epoxies, and repair mortars to service any need you may have. These proven products, backed by our 85 years of experience, are perfect for numerous applications, such as industrial manufacturing, chemical processing, and electric power generation. Have a look at our product offerings:

**Grouts**

Your precision equipment needs to be held steady in place. With the W. R. MEADOWS line of industrial grouts, you can be rest assured that your machinery will be safely and steadily held, even in the toughest and most stressful of conditions. Our line of precision grouts allows you to select a product that is suitable for a wide variety of needs, whether high strength, high flow, or extended working time.

**1428 HP – Non-Shrink, Non-Ferrous, Mineral-Aggregate-Based Precision Grout**

1428 HP is a hydraulic-cement-based, precision, non-shrink, load-bearing grout having an extended working time up to 30 minutes under fluid condition. 1428 HP is designed to transfer load effectively and safely, ensuring long service time of the grouted item. It is a non-corrosive, non-metallic, mineral-based precision grout, developed to have high initial and ultimate flexural and compressive strengths. It can be mixed quickly, as needed, on the job site. 1428 HP offers exceptional workability and is easily placed by pouring or pumping. The product is designed to give non-shrink performance under various conditions for both interior and exterior applications.

**588-10K – Non-Shrink, Non-Ferrous, Mineral-Aggregate-Based Precision Grout**

588-10K is a hydraulic-cement-based, precision, non-shrink, load-bearing grout designed to transfer load effectively and safely, ensuring long service time of the grouted item. It is a non-corrosive, non-metallic, mineral-based precision grout, developed to have high initial and ultimate flexural and compressive strengths. It can be mixed quickly, as needed, on the jobsite. 588-10K offers exceptional workability and is easily placed by pouring or pumping. The product is designed to give non-shrink performance under various conditions for both interior and exterior applications.

**CG-86™ – Construction-Grade Grout**

CG-86 construction-grade grout is a non-gaseous, non-shrink economical grout. It was specifically developed as a high strength, cost-effective, general-purpose grout for use across a broad range of large and small construction projects. CG-86 will not rust and contains no added chlorides or gypsum. It is furnished pre-mixed and ready to use. CG-86 may be extended for deep grouting with pea gravel for greater yield and increased economy. CG-86 is freeze-thaw stable and may be used interiorly or exteriorly, above- or below-grade.

**GROUT SELECTION FLOW CHART**

- Impact & Vibrational Resistance
- High Initial & Ultimate Strength
- Non-Shrink
- Non-Ferrous
- High Flow
- Non-Metallic
- Mineral-Aggregate-Based

**NON-SHRINK EPOXY GROUT FLOW CHART**

- 1428 HP
- 30 Minute Operating Time
- High Flow
- Non-Metallic
- Mineral-Aggregate-Based

**NONSHRINK CEMENTITIOUS GROUT FLOW CHART**

- 588-10K
- Non-Shrink
- Non-Ferrous
- Mineral-Aggregate-Based

**W. R. MEADOWS**

Our line of products, including grouts, epoxies, and repair mortars, is designed to meet your needs in a variety of industrial applications. Whether you require high strength, high flow, or extended working time, our products are backed by our 85 years of experience and are perfect for numerous applications, such as industrial manufacturing, chemical processing, and electric power generation.
W. R. MEADOWS is your single-source solution for all your plant maintenance and equipment needs, whether new construction or retrofit. Our line of products includes grouts, epoxies, and repair mortars to service any need you may have. These proven products, backed by our 85 years of experience, are perfect for numerous applications, such as industrial manufacturing, chemical processing, and electric power generation. Have a look at our product offerings:

**Grouts**

Your precision equipment needs to be held steady in place. With the W. R. MEADOWS line of industrial grouts, you can be rest assured that your machinery will be safely and steadily held, even in the toughest and most stressful of conditions. Our line of precision grouts allows you to select a product that is suitable for a wide variety of needs, whether high strength, high flow, or extended working time.

**1428 HP – Non-Shrink, Non-Ferrous, Mineral-Aggregate-Based Precision Grout**

1428 HP is a hydraulic-cement-based, precision, non-shrink, load-bearing grout having an extended working time up to 30 minutes under fluid condition. 1428 HP is designed to transfer load effectively and safely, ensuring long service time of the grouted item. It is a non-corrosive, non-metallic, mineral-based precision grout, developed to have high initial and ultimate flexural and compressive strengths. It can be mixed quickly, as needed, on the job-site. 1428 HP offers exceptional workability and is easily placed by pouring or pumping. The product is designed to provide non-shrink performance under various conditions for both interior and exterior applications.

**CG-86™ – Construction-Grade Grout**

CG-86 construction-grade grout is a non-gaseous, non-shrink economical grout. It was specifically developed as a high strength, cost-effective, general-purpose grout for use across a broad range of large and small construction projects. CG-86 will not rust and contains no added chlorides or gypsum. It is furnished pre-mixed and ready to use. CG-86 may be extended for deep grouting with pea gravel for greater yield and increased economy. CG-86 is freeze-thaw stable and may be used interiorly or exteriorly, above- or below-grade.

**GROUT SELECTION FLOW CHART**

![Flow Chart Image](image-url)

**NON-SHRINK EPOXY GROUT FLOW CHART**

![Flow Chart Image](image-url)

**NONSHRINK CEMENTITIOUS GROUT FLOW CHART**

![Flow Chart Image](image-url)
Grouts cont.

**EG-96 HP** – General Purpose, Three-Part, High Strength, Flowable Epoxy Grout

EG-96 HP is a three component, 100 % solids, VOC and BGE-free, epoxy resin system designed specifically for pours from 1" (25.4 mm) to 8" (203.2 mm). EG-96 HP offers rapid strength development and excellent flow characteristics. EG-96 HP flows into spaces under machines and fills completely before hardening. EG-96 HP shows good resistance to impact and vibratory loading equal to reinforced rubber materials and will not delaminate under the most severe shock loads.

**PAC-IT** – Expansive Dry Pack Grout

PAC-IT Packable Grout is a non-ferrous, non-gaseous, non-shrink grout specifically formulated for grouting applications, without the need for expensive form work. PAC-IT is a premixed, low-slump, non-gaseous grout offering high density and strength. PAC-IT offers excellent workability and high one-day strengths in addition to the non-shrink property.

**SPEED-E-ROC** – Rapid-Setting Anchoring Cement Grout

SPEED-E-ROC is a pourable, rapid setting and hardening, high strength, hydraulic cement compound designed for anchoring and grouting. SPEED-E-ROC is non-shrink and expands to form a hydraulic lock when setting anchors. SPEED-E-ROC has an initial set time of 10-20 minutes at 77° F (25° C) and obtains 5,000 psi (34.4 MPa) in one hour.

Epoxies

The proven line of W. R. MEADOWS epoxies, including our REZI-WELD™ line, provides incredible bond strength and adhesive properties. These products feature ease of application, various packaging designs, multiple formulations, and unparalleled performance.

**POLY-GRIP™** – Two-Component, Polyester-Based Anchoring Adhesive, Unitized Cartridge System

Two-component, non-sag, polyester-based, very rapid curing and hardening, high strength, structural anchoring packaged in a unitized cartridge system suitable for ambient and cold temperature applications.

**REZI-WELD (IP)** – Low-Viscosity Epoxy Injection Pre-Pak

REZI-WELD (IP) Injection Pre-Pak is an amber-colored, two-component, low-viscosity, rapid setting, penetrating epoxy compound. REZI-WELD (IP) is easy-to-use and offers high-modulus and high-strength characteristics. It effectively bonds cured concrete or metal to concrete. REZI-WELD (IP) is resistant to most chemicals and moisture insensitive.

**REZI-WELD 3/2 – Epoxy Grout-Patch Kit**

REZI-WELD 3/2 grout-patch is a moisture-insensitive, two-component epoxy kit for grouting, sealing base plates, and patching concrete. Part A, the specially formulated epoxy resin and selected, graded aggregates is premixed and packaged in a five-gallon container. A drop-in tray is provided to hold the separately packaged Part B, or activator. This handy, unitized packaging provides its own mixing vessel. Just open the pail, remove the tray, add the activator to the premixed epoxy-aggregate compound and it’s ready to use. It’s that easy.

**REZI-WELD FLEX – Semi-Rigid, Flexible Epoxy Joint Filler**

REZI-WELD FLEX is a gray, two-part, pourable consistency, premium-grade, moisture-insensitive, epoxy joint filler formulation. When cured, it is semi-rigid, with a Shore D Hardness of 60.

**REZI-WELD GEL PASTE – Gel Consistency-Thixotropic, Multi-Purpose Construction Epoxy**

REZI-WELD GEL PASTE is a high viscosity, rapid setting, thixotropic, structural, epoxy-based, chemical anchoring/bonding adhesive and injection gel. REZI-WELD GEL PASTE provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD GEL PASTE is a two-component, moisture insensitive construction epoxy, which can be troweled, brushed, injected, or pumped.

**REZI-WELD GEL PASTE STATE (New Formulation!) – Construction Epoxy**

REZI-WELD GEL PASTE STATE is a high viscosity, high modulus, rapid-setting, thixotropic, structural, epoxy-based, chemical anchoring/bonding adhesive and injection gel. REZI-WELD GEL PASTE STATE provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD GEL PASTE STATE is a two-component, moisture insensitive construction epoxy, which can be troweled, brushed, injected, or pumped.

**REZI-WELD LV – Low Viscosity Injection Epoxy**

REZI-WELD LV low viscosity injection epoxy is a moisture insensitive, very low viscosity, high modulus, high strength structural injection resin. REZI-WELD LV resists most chemicals and features a unique, innovative unitized packaging concept. It combines two pre-measured components into an easy-to-handle single unit along with a handy wood-mixing paddle. The unitized packaging eliminates mishandling and mismatching of the components on the jobsite.

**REZI-WELD LV STATE – Ultra-Low Viscosity Injection Epoxy**

REZI-WELD LV STATE is an ultra-low viscosity, rapid setting, epoxy-based, structural injection resin. This anchoring adhesive and injection resin is moisture insensitive and provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD LV STATE resists most chemicals and forms a structural monolithic bond.
Grouts cont.

EG-96 HP – General Purpose, Three-Part, High Strength, Flowable Epoxy Grout

EG-96 HP is a three component, 100 % solids, VOC and BGE1 free, epoxy resin system designed specifically for pours from 1” (25.4 mm) to 8” (203.2 mm). EG-96 HP offers rapid strength development and excellent flow characteristics. EG-96 HP flows into spaces under machines and fills completely before hardening. EG-96 HP shows good resistance to impact and vibratory loading equal to reinforced rubber materials and will not delaminate under the most severe shock loads.

PAC-IT – Expansive Dry Pack Grout

PAC-IT Packable Grout is a non-ferrous, non-gaseous, non-shrink grout specifically formulated for grouting applications, without the need for expensive form work. PAC-IT is a premixed, low-slump, non-gaseous grout offering high density and strength. PAC-IT offers excellent workability and high one-day strengths in addition to the non-shrink property.

SPEED-E-ROC™ – Rapid-Setting Anchoring Cement Grout

SPEED-E-ROC is a pourable, rapid setting and hardening, high strength, hydraulic cement compound designed for anchoring and grouting. SPEED-E-ROC is non-shrink and expands to form a hydraulic lock when setting anchors. SPEED-E-ROC has an initial set time of 10-20 minutes at 77°F (25°C) and obtains 5,000 psi (34.4 MPa) in one hour.

Epoxies

The proven line of W. R. MEADOWS epoxies, including our REZI-WELD™ line, provides incredible bond strength and adhesive properties. These products feature ease of application, various packaging designs, multiple formulations, and unparalleled performance.

POLY-GRIP™ – Two-Component, Polyester-Based Anchoring Adhesive, Unitized Cartridge System

Two-component, non-sag, polyester-based, very rapid curing and hardening, high strength, structural anchoring packaged in a unitized cartridge system suitable for ambient and cold temperature applications.

REZI-WELD (IP) – Low-Viscosity Epoxy Injection Pre-Pak

REZI-WELD (IP) Injection Pre-Pak is an amber-colored, two-component, low-viscosity, rapid setting, penetrating epoxy compound. REZI-WELD (IP) is easy-to-use and offers high-modulus and high-strength characteristics. It effectively bonds cured concrete or metal to concrete. REZI-WELD (IP) is resistant to most chemicals and moisture insensitive.

REZI-WELD 3/2 – Epoxy Grout-Patch Kit

REZI-WELD 3/2 grout-patch is a moisture-insensitive, two-component epoxy kit for grouting, sealing base plates, and patching concrete. Part A, the specially formulated epoxy resin and selected, graded aggregates is premixed and packaged in a five-gallon container. A drop-in tray is provided to hold the separately packaged Part B, or activator. This handy, unitized packaging provides its own mixing vessel. Just open the pail, remove the tray, add the activator to the premixed epoxy-aggregate compound and it’s ready to use. It’s that easy.

REZI-WELD FLEX – Semi-Rigid, Flexible Epoxy Joint Filler

REZI-WELD FLEX is a gray, two-part, pourable consistency, premium-grade, moisture-insensitive, epoxy joint filler formulation. When cured, it is semi-rigid, with a Shore D Hardness of 60.

REZI-WELD GEL PASTE – Gel Consistency-Thixotropic, Multi-Purpose Construction Epoxy

REZI-WELD GEL PASTE is a high viscosity, rapid setting, thixotropic, structural, epoxy-based, chemical anchoring/bonding adhesive and injection resin. REZI-WELD GEL PASTE provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD GEL PASTE is a two-component, moisture insensitive construction epoxy, which can be troweled, brushed, injected, or pumped.

REZI-WELD GEL PASTE STATE (New Formulation!) – Construction Epoxy

REZI-WELD GEL PASTE STATE is a high viscosity, high modulus, rapid-setting, thixotropic, structural, epoxy-based, chemical anchoring/bonding adhesive and injection gel. REZI-WELD GEL PASTE STATE provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD GEL PASTE STATE is a two-component, moisture insensitive construction epoxy, which can be troweled, brushed, injected, or pumped.

REZI-WELD LV – Low Viscosity Injection Epoxy

REZI-WELD LV low viscosity injection epoxy is a moisture insensitive, very low viscosity, high modulus, high strength structural injection resin. REZI-WELD LV resists most chemicals and features a unique, innovative unitized packaging concept. It combines two pre-measured components into an easy-to-handle single unit along with a handy wood-mixing paddle. The unitized packaging eliminates mishandling and mismatching of the components on the jobsite.

REZI-WELD LV STATE – Ultra-Low Viscosity Injection Epoxy

REZI-WELD LV STATE is an ultra-low viscosity, rapid setting, epoxy-based, structural injection resin. This anchoring adhesive and injection resin is moisture insensitive and provides high mechanical properties and bond strength to concrete and various other substrates. REZI-WELD LV STATE resists most chemicals and forms a structural monolithic bond.

1 BUTYL GLYCIDYL ETHER. The EPA (SARA Title III, section 312) lists BGE as “toxic” (per ANSI 2129-1) by skin absorption and an immediate health hazard.

2 BIS(2-ETHYLHEXYL)SEbacate (BEG)
Repair Mortars

Our repair mortars have been used the world-over to repair deteriorated concrete. Our repair mortars makes old concrete look new again, and perform to peak capacity. Not only is your surface renewed, but the concrete is strengthened and able to absorb stress and fatigue that high powered machinery may create.

**MEADOW-CRETE® FNP – One Component, Flowable, Form & Pour Structural Repair Mortar**

MEADOW-CRETE FNP is a one-component, flowable, shrinkage-compensated, corrosion inhibitor enhanced repair mortar for structural applications. MEADOW-CRETE FNP can be formed and poured or formed and pumped, utilizing a suitable concrete pump. It has a low permeability, protects embedded reinforcing steel, and provides a lower in-place cost.

**MEADOW-CRETE FNP EXTENDED – One-Component, Pre-Extended, Flowable, Form & Pour Structural Repair Mortar**

MEADOW-CRETE FNP EXTENDED is a one-component, pre-extended, shrinkage-compensated repair mortar for structural repairs and reinstatement of concrete elements. The product can be formed and poured or formed and pumped, utilizing a suitable concrete pump. MEADOW-CRETE FNP EXTENDED contains 3/8” nominal size aggregate and is suitable for applications requiring cathodic protection, impressed systems, or sacrificial anode applications.

**MEADOW-PATCH® 5 & 20 – Very Fast & Fast -Setting, General Purpose Cementitious Repair Mortars**

MEADOW-PATCH 5 & 20 are one component, cementitious, very fast & fast-setting restoration/repair mortars. These products have are light gray color and are designed for vertical, overhead and horizontal applications. These rapid setting, low slump repair mortars may be troweled, shaped, molded and shaved before taking final set. They are an excellent patching solution for difficult vertical/overhead applications without using expensive and intricate forming techniques. MEADOW-PATCH 5 also is a hydraulic water-plug suitable for stopping active water leaks concrete.

**MEADOW-CRETE® GPS – One-Component, Polymer-Modified, General Purpose Structural Repair Mortar**

MEADOW-CRETE GPS is a one-component, trowel- or pneumatically-applied (wet process), migrating-corrosion-inhibitor enhanced, polymer-modified, shrinkage-compensated, fiber-reinforced, micro-silica enhanced, cementitious repair mortar for horizontal, vertical, and overhead applications. The product is ideal for patches from 1/4” to deep horizontal, vertical, and overhead repairs and resurfacing of concrete, either small or large areas; interior or exterior application.

**MEADOW-PATCH T1 – One-Component, Polymer-Modified, Thin Patch Repair Mortar**

MEADOW-PATCH T1 is a one-component, polymer-modified, cementitious repair mortar designed for horizontal, vertical, and overhead applications. This all-purpose mortar is designed for maintenance patching and minor repairs 1” to featheredge.

**MEADOW-PATCH T2 – Concrete Resurfacer & Repair Mortar**

MEADOW-PATCH T2 is a two-component, polymer-modified, cementitious concrete resurfacer and repair mortar. MEADOW-PATCH T2 is designed to resurface concrete from 1/16” to 1/2” in depth and is also a premium-grade repair mortar capable of patching concrete from featheredge to 2” in depth on horizontal applications.

**MEADOW-PLUG™ – One-Component, Super Fast Setting, Hydraulic Repair Mortar**

MEADOW-PLUG is a specially blended, extremely fast setting, hydraulic cement product designed to instantly stop running water or fluid seepage in concrete or masonry structures. This single component, high strength repair mortar permanently plugs non-moving cracks, joints, and voids.

Advanced Grouts, Epoxies, and Repair Mortars

W. R. MEADOWS is your single-source solution for all your plant and equipment needs, whether new construction or retrofit. Our line of products includes grouts, epoxies, and repair mortars to service any need you may have.
Repair Mortars

Our repair mortars have been used the world-over to repair deteriorated concrete. Our repair mortars makes old concrete look new again, and perform to peak capacity. Not only is your surface renewed, but the concrete is strengthened and able to absorb stress and fatigue that high powered machinery may create.

**MEADOW-CRETE® FNP – One Component, Flowable, Form & Pour Structural Repair Mortar**

MEADOW-CRETE FNP is a one-component, flowable, shrinkage-compensated, corrosion inhibitor enhanced repair mortar for structural applications. MEADOW-CRETE FNP can be formed and poured or formed and pumped, utilizing a suitable concrete pump. It has a low permeability, protects embedded reinforcing steel, and provides a lower in-place cost.

**MEADOW-CRETE FNP EXTENDED – One-Component, Pre-Extended, Flowable, Form & Pour Structural Repair Mortar**

MEADOW-CRETE FNP EXTENDED is a one-component, pre-extended, shrinkage-compensated repair mortar for structural repairs and reinstatement of concrete elements. The product can be formed and poured or formed and pumped, utilizing a suitable concrete pump. MEADOW-CRETE FNP EXTENDED contains 3/8” nominal size aggregate and is suitable for applications requiring cathodic protection, impressed systems, or sacrificial anode applications.

**MEADOW-PATCH® 5 & 20 – Very Fast & Fast-Setting, General Purpose Cementitious Repair Mortars**

MEADOW-PATCH 5 & 20 are one component, cementitious, very fast & fast-setting restoration/repair mortars. These products have are light gray color and are designed for vertical, overhead and horizontal applications. These rapid setting, low slump repair mortars may be troweled, shaped, molded and shaved before taking final set. They are an excellent patching solution for difficult vertical/overhead applications without using expensive and intricate forming techniques. MEADOW-PATCH 5 also is a hydraulic water-plug suitable for stopping active water leaks concrete.

**MEADOW-CRETE® GPS – One-Component, Polymer-Modified, General Purpose Structural Repair Mortar**

MEADOW-CRETE GPS is a one-component, trowel- or pneumatically-applied (wet process), migrating-corrosion-inhibitor enhanced, polymer-modified, shrinkage-compensated, fiber-reinforced, micro-silica enhanced, cementitious repair mortar for horizontal, vertical, and overhead applications. The product is ideal for patches from 1/4” to deep horizontal, vertical, and overhead repairs and resurfacing of concrete, either small or large areas; interior or exterior application.

**MEADOW-PATCH T1 – One-Component, Polymer-Modified, Thin Patch Repair Mortar**

MEADOW-PATCH T1 is a one-component, polymer-modified, cementitious repair mortar designed for horizontal, vertical, and overhead applications. This all-purpose mortar is designed for maintenance patching and minor repairs 1” to featheredge.

**MEADOW-PATCH T2 – Concrete Resurfacer & Repair Mortar**

MEADOW-PATCH T2 is a two-component, polymer-modified, cementitious concrete resurfacer and repair mortar. MEADOW-PATCH T2 is designed to resurface concrete from 1/16” to 1/2” in depth and is also a premium-grade repair mortar capable of patching concrete from featheredge to 2” in depth on horizontal applications.

**MEADOW-PLUG™ – One-Component, Super Fast Setting, Hydraulic Repair Mortar**

MEADOW-PLUG is a specially blended, extremely fast setting, hydraulic cement product designed to instantly stop running water or fluid seepage in concrete or masonry structures. This single component, high strength repair mortar permanently plugs non-moving cracks, joints, and voids.

Advanced Grouts, Epoxies, and Repair Mortars

W. R. MEADOWS is your single-source solution for all your plant and equipment needs, whether new construction or retrofit. Our line of products includes grouts, epoxies, and repair mortars to service any need you may have.
If you need more information on our complete line of industrial grouts, epoxies and mortars, here are four quick and easy access points:

- Visit our comprehensive website: www.wrmeadows.com
- Contact W. R. MEADOWS, INC. via email: info@wrmeadows.com
- Call toll free: 1-800-342-5976
- Fax: 1-847-683-4544

W. R. MEADOWS, INC.
P.O. Box 338  •  HAMPSHIRE, IL 60140-0338
Phone: 847/214-2100  •  Fax: 847/683-4544
www.wrmeadows.com
info@wrmeadows.com
www.twitter.com/wrmeadows

Distributed by:

Ideal applications:

- Industrial Manufacturing
- Chemical Processing
- Pulp, Paper & Wood; Lumber Operations and Converting Plants
- Electric Power Generation
- Petroleum Refining; Hydrocarbon Processing Industry
- Metal & Minerals; Mines, Processing Plants & Mills
- Food & Beverage; Processing & Distribution/Storage Facilities
- Pharmaceutical & Biotech Industry
- Onshore Oil & Gas Processing

Whatever your needs... we have the solution.