

EMACO® T Traffic area repair

One-component, high early strength mortars allow for versatile and durable repairs in horizontal patching and formed vertical applications. One product allows rubber tire traffic within 45 minutes, while another will accept a polymer topping in as little as four hours after placement at 70°F (23°C).

Technical Data

| | | EMACO® T415 | EMACO® T430 | SET® 45 | SET® 45 HW |
|--------------------------------------|----------|---------------------|----------------------|-----------------------------|-----------------------------|
| Supply form | | powder | powder | powder | powder |
| Application temperature | °F (°C) | 20 to 85 (-7 to 29) | 20 to 100 (-7 to 38) | 20 to 85 (-7 to 29) | 40 to 100 (-4 to 38) |
| Pot life (minutes) | @72° | 12 | 45 | 10 | 22 |
| Initial set (minutes) | @72° | 14 to 21 | 65 to 75 | 10 to 15 | 25 to 35 |
| Final set (minutes) | @72° | 20 to 36 | 80 to 90 | 12 to 20 | 20 to 40 |
| Compressive strength, psi (MPa) | 1 hour | | | 2,000 (13.8) | |
| | 2 hour | 1,500 (10) | | | |
| | 3 hour | | 1,000 (7) | 5,000 (34.5) | 3,000 (20.7) |
| | 1 day | 4,500 (30) | 4,500 (31) | 6,000 (41.4) | 6,000 (41.4) |
| | 7 day | 8,000 (55) | 7,800 (54) | | |
| | 28 day | 9,000 (62) | 9,000 (62) | 8,500 (58.6) | 8,000 (55.2) |
| Flexural strength, psi (MPa) | 28 day | 1,100 (7.6) | 1,150 (7.9) | 1,125 (7.8) | 1,125 (7.8) |
| Slant shear bond strength, psi (MPa) | 28 day | 3,100 (21.4) | 3,360 (23.2) | | |
| Freeze/thaw resistance | 28 day | >98% | >98% | >80% | >80% |
| Rapid chloride permeability | Coulombs | 960 (very low) | 990 (very low) | 122 (very low) ^a | 836 (very low) ^a |

Data obtained from neat materials, except ^(a) with aggregate extension.

Product Comparison

| Product | Description | Layer Thickness | | | Working Time | | | Application | | |
|-------------|---|----------------------------|--|----------------------------|--------------|-----|------|-----------------------|-----------------|---------------------------|
| | | Horizontal | Horizontal (with siliceous pea gravel) | Vertical | Fast | Med | Long | Corrosive Environment | Low Temperature | Over-Coatable with Resins |
| EMACO® T415 | Very rapid hardening cementitious patching and repair mortar that offers high early strengths. | 1/4 to 1 in. (6 to 25 mm) | >1 in. (25 mm) | 1/4 to 1 in. (6 to 25 mm) | • | | | | • | • |
| EMACO® T430 | Rapid hardening and high early strength cementitious repair and overlay mortar. | 1/4 to 1 in. (6 to 25 mm) | >1 in. (25 mm) | 1/4 to 1 in. (6 to 25 mm) | | | • | | | • |
| SET®45 | Ultra high early strength magnesium phosphate-based patching and repair mortar. | 1/2 to 1 in. (12 to 25 mm) | 1 to 4 in. (25 to 100 mm)* | 1/2 to 1 in. (12 to 25 mm) | • | | | • | • | |
| SET®45 HW | High early strength magnesium phosphate-based patching and repair for mortar for large applications and hot weather conditions. | 1/2 to 1 in. (12 to 25 mm) | >1 (25 mm)* | 1/2 to 1 in. (12 to 25 mm) | | • | | • | | |

*SET® 45 HW is recommended for deep placement.

EMACO® S Structural Repair

A complete range of one component, rheoplastic, cement-based mortars that offer shrinkage compensation, excellent bond, low permeability and corrosion inhibition. Different products allow for varied application techniques in vertical and overhead installations, such as low pressure spray, hand trowel and form and pour to achieve labor savings.

Product Comparison

| Product | Description | Layer Thickness | | | Strength Development | | Application | | | |
|---------------|--|--------------------------------|--------------------------------|-----------------------------|----------------------|------|-------------|--------|------|-------------|
| | | Vertical | Overhead | Horizontal | Med | Fast | Spray | Trowel | Pump | Form & Pour |
| EMACO® S88 CI | Thixotropic, trowel or spray applied repair mortar that is fiber reinforced and silica fume-modified to offer high strength and shrinkage compensation | 3/8 to 2 in. (10 to 50 mm) | 3/8 to 1-1/2 in. (10 to 40 mm) | | | • | • | • | | |
| EMACO® S77 CI | Very flowable, rheoplastic repair mortar that is silica fume-modified to offer high strength and shrinkage compensation. | 3/8 to 1-1/2 in. (10 to 40 mm) | 3/8 to 1-1/2 in. (10 to 40 mm) | | • | | • | | • | • |
| EMACO® S66 CI | Flowable, rheoplastic repair concrete that is silica fume-modified to offer corrosion resistance and shrinkage compensation | 1 in. (25 mm) to full depth | 1 in. (25 mm) to full depth | 1 in. (25 mm) to full depth | • | | | | • | • |

Technical Data

| | | EMACO® S88 CI | EMACO® S77 CI | EMACO® S66 CI |
|--------------------------------------|----------|------------------------------|------------------------------|------------------------------|
| Supply form | | powder | powder | powder |
| Compressive strength, psi (MPa) | 1 day | 3500 (24.1) | 3,400 (23.5) | 2,500 (17.2) |
| | 7 day | 8,000 (55.2) | 8,000 (55.2) | 6,000 (41.4) |
| | 28 day | 11,000 (75.8) | 12,000 (82.8) | 8,000 (55.2) |
| Flexural strength, psi (MPa) | 28 day | 1,300 (9.0) | 1,450 (10.0) | 770 (5.3) |
| Slant shear bond strength, psi (MPa) | 28 day | 3,000 (20.7) | 3,100 (21.4) | 3,300 (22.8) |
| Modulus of elasticity, psi (GPa) | 28 day | 5.0 x 10 ⁶ (34.5) | 4.9 x 10 ⁶ (33.8) | 5.9 x 10 ⁶ (40.7) |
| Rapid chloride permeability | Coulombs | 772 (very low) | 870 (very low) | 650 (very low) ^a |

Concrete Repair Product Selector

| Products | Application | | | | | | Binder | | | Description | | | | | | | | | | | Performance | | | | | Environment | | | | | |
|---------------------|-------------|-------------|--------|-------|---------------------|------------|--------------|-------------------------|---------------------|-------------|----------------------|-----------------------------------|-----------------------|------------------|--------------------|---------------|------------------------------|----------------------|-----------------------|------------------|----------------------|------------------|----------------|----------------------|------------------|-------------|----------------------|--------------|--------------------|------------------|------------------------------|
| | Spray | Form & Pour | Trowel | Brush | Vertical / Overhead | Horizontal | Cementitious | High Performance Cement | Magnesium Phosphate | Resinous | Nonsag Repair Mortar | Pourable / Flowable Repair Mortar | Architectural Coating | Hydraulic Cement | Waterproof Coating | Rebar Coating | Integral Corrosion Inhibitor | Corrosion Mitigation | Shrinkage Compensated | Polymer Modified | Silica Fume Enhanced | Fiber Reinforced | Iron Aggregate | Number of Components | Layer Thickness* | | Aggregate Extendable | Fast Setting | Chemical Resistant | Impact Resistant | Crack Bridging |
| EMACO® S88 CI | ● | | ● | | ● | ● | | | | ● | | | | | | | ● | ● | | ● | ● | | | 1 | 3/8 – 2" | | | | | | Structural Repair |
| EMACO® S77 CI | | ● | | | ● | ● | | | | ● | | | | | | | ● | ● | | ● | ● | | | 1 | 3/8 – 1-1/2" | ● | | | | | Structural Repair |
| EMACO® S66 CI | | ● | | | ● | ● | | | | ● | | | | | | | ● | ● | | ● | ● | | | 1 | 1 – 8" | | | | | | Structural Repair |
| MASTERPATCH® 240 CR | | ● | | | ● | ● | | | | ● | | | | | | | | | | | | | | 1 | 1 – 6" | | | | | | General Repair |
| EMACO® R300 CI | ● | ● | ● | | ● | ● | | | | ● | ● | | | | | ● | | ● | ● | | | | | 1 | 0 – 1/2" | | | | | | Surface Renovation |
| EMACO® R310 CI | | ● | | | ● | ● | | | | ● | ● | | | | | ● | | ● | ● | | | | | 1 | 1/4 – 3" | ● | | | | | Surface Renovation |
| EMACO® T415/T430 | | ● | | | ● | ● | ● | | | ● | ● | | | | | | | | | | | | | 1 | 1/4 – 8" | ● | ● | | | | Traffic Area Repair |
| SET® 45 | | ● | | | ● | ● | | ● | | ● | ● | | | | | | | | | | | | | 1 | 1/2 – 8" | ● | ● | | | | Traffic Area Repair |
| SET® 45 HW | | ● | | | ● | ● | | ● | | ● | ● | | | | | ● | | | | | | | | 1 | 1/2 – 8" | ● | ● | | | | Traffic Area Repair |
| MASTERPATCH® 95 | | ● | | | ● | ● | | | ● | ● | ● | | | | | | | | | | | ● | | 3 | 0 – 2" | ● | ● | ● | | | Shotcrete Repair |
| SHOTPATCH® 21 | ● | | | | ● | ● | | | | ● | ● | | | | | ● | | | | | | | | 1 | 3/8 – 6" | | | | | | Shotcrete Repair |
| SHOTPATCH® 21F | ● | | | | ● | ● | | | | ● | ● | | | | | ● | | | | | | ● | | 1 | 3/8 – 6" | | | | | | Shotcrete Repair |
| EMACO® P24 | ● | | | ● | ● | ● | | | ● | ● | ● | | | | ● | ● | | | | | | | | 3 | 1/12" | | | | | | Waterproofing and Protection |
| CORR-STOPS® CI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Reinforced Concrete Repairs |

* 1 inch = 25 mm ** Depth of repair area



EMACO® R Surface Renovation

A complete range of one-component, polymer-modified, cement-based repair mortars offering good workability, very low permeability, corrosion inhibition, shrinkage compensation and fast strength gain for quick turnaround. Different products within the range allow for resurfacing distressed concrete on vertical, horizontal or overhead areas, both interior and exterior.

Technical Data

| | | EMACO® R300 CI | EMACO® R310 CI | EMACO® R320 CI | EMACO® R350 Gel Patch |
|--------------------------------------|----------|------------------------------|------------------------------|----------------------------|------------------------------|
| Supply form | | powder | powder | powder | powder |
| Color | | Concrete gray | Concrete gray | Concrete gray | Concrete gray |
| Compressive strength, psi (MPa) | 1 day | 2,000 (13.8) | 2,500 (17.2) | 1,800 (12.4) | 1,500 (10.4) |
| | 7 day | 5,000 (34.5) | 5,500 (37.9) | 5,000 (34.5) | 3,500 (24.2) |
| | 28 day | 7,000 (48.3) | 7,500 (51.7) | 7,000 (48.3) | 5,000 (34.5) |
| Flexural strength, psi (MPa) | 28 day | 1,200 (8.3) | 1,500 (10.3) | 1,450 (10.0) | 900 (6.2) |
| Slant shear bond strength, psi (MPa) | 28 day | 2,100 (14.5) | 2,100 (15.2) | 2,300 (15.9) | 1,500 (10.4) |
| Modulus of elasticity, psi (GPa) | 28 day | 2.7 x 10 ⁶ (18.6) | 2.9 x 10 ⁶ (20.0) | 3.2 10 ⁶ (22.1) | 2.0 x 10 ⁶ (14.0) |
| Rapid chloride permeability | Coulombs | 1,087 (very low) | 850 (very low) | n/a | 300 (very low) |

Product Comparison

| Product | Description | Layer Thickness | | | Strength Development | | Application | | | |
|-----------------------|--|-------------------------------|-------------------------------|--|----------------------|------|-------------|--------|------|-------------|
| | | Vertical | Overhead | Horizontal | Med | Fast | Spray | Trowel | Pump | Form & Pour |
| | | | | | | | | | | |
| EMACO® R300 CI | Polymer-modified leveling and skim coat mortar for vertical and horizontal applications. | up to 1 in. (25 mm) | | up to 1/4 in. (6 mm) | • | | • | • | | |
| EMACO® R310 CI | Polymer-modified fast-setting patching and resurfacing mortar for horizontal applications. | 1/4 to 1 in. (6 to 25 mm) | | 1/4 to 1 in. (6 to 25 mm) or 1 to 3 in. ^a (25 to 76 mm) | | • | | • | • | |
| EMACO® R320 CI | Polymer-modified, fiber-reinforced patching and resurfacing mortar for vertical and overhead applications. | 1/4 to 1-1/2 in. (6 to 38 mm) | 1/4 to 1-1/2 in. (6 to 38 mm) | | • | | • | | • | • |
| EMACO® R350 Gel Patch | Polymer-modified, lightweight high-build patching mortar for vertical and overhead applications. | 0 to 2-1/4 in. (0 to 70 mm) | 0 to 2-1/4 in. (0 to 70 mm) | | • | | • | | | • |

^a with pea gravel

SET® 45

Chemical action repair mortar

SET® 45 is a one-component concrete repair and anchoring material which sets in 15 minutes and takes rubber tire traffic 45 minutes after placement. This product bonds to both concrete and masonry and can be used indoors and outdoors for a variety of highway and heavy industrial repair jobs. It comes in two formulations—SET®45 Regular for use in ambient temperatures below 85°F (29°C); and SET® 45 Hot Weather for use in ambient temperatures ranging from 85 to 100°F (29 to 38°C).

Note: Regardless of the temperature, SET® 45 Hot Weather formula with aggregate should be used for deep placements. Consult your ChemRex Inc. representative for further instructions.

Technical Data

Performance Data:

Typical Compressive Strengths: psi (MPa) (Materials and Curing Times at Specified Temperatures) ASTM C 109 (Modified)
(All tests were performed with neat (no aggregate) material.)

| | Plain Concrete | | SET® 45 Regular | | SET® 45 Regular | | SET® 45 Hot Weather | |
|--------|----------------|--------|-----------------|---------------------|-----------------|--------|---------------------|--------|
| | @72°F | (22°C) | @72°F | (22°C) | @36°F | (2°C) | 95°F | (35°C) |
| 1 hour | — | — | 2,000 | (13.8) ³ | — | — | — | — |
| 3 hour | — | — | 5,000 | (34.5) | — | — | 3,000 | (20.7) |
| 6 hour | — | — | 5,000 | (34.5) | 1,200 | (8.3) | 5,000 | (34.5) |
| 1 day | 500 | (3.5) | 6,000 | (41.4) | 5,000 | (34.5) | 6,000 | (41.4) |
| 3 day | 1,900 | (13.1) | 7,000 | (48.3) | 7,000 | (48.3) | 7,000 | (48.3) |
| 28 day | 4,000 | (27.6) | 8,500 | (58.6) | 8,500 | (58.6) | 8,500 | (55.2) |

³Only SET® 45 Regular formula, tested at 72°F (22°C), obtains 2,000 psi (13.8 MPa) compressive strength in one hour.

- Easy-to-use—just add water
- Wide temperature use range—from below freezing to hot weather exposure
- Rapid, high-early strength—when 2 in. (51 mm) cubes are tested, the results show approximately 2,000 psi (13.8 MPa) compressive strength in one hour
- Superior bonding—no bonding agent is needed
- Resistant to freeze/thaw cycles and deicing chemicals.
- Thermal expansion/contraction rate similar to that of plain, Portland cement concrete
- Virtually no drying shrinkage
- Only air-curing required