



REMR MATERIAL DATA SHEET CM-PC-1.14
 CONCRETE PATCHING MATERIAL: CELTITE 10-60
 CELROC RPM

1. NAME

Celtite 10-60 CELROC RPM

Physical properties:Compressive strength
ASTM C 109

2. MANUFACTURER

Celtite, Inc.
 150 Carley Court
 Georgetown, KY 40324
 Telephone: 502-863-6800
 800-626-2948

	<u>PSI</u>
1 hour	2,000
3 hours	4,000
24 hours	7,000
3 days	8,000
28 days	9,000

Tensile strength
ASTM C 78

3. DESCRIPTION

Celtite 10-60 CELROC RPM is a fast-setting and very rapid-hardening cement mortar.

	<u>PSI</u>
3 hours	400
24 hours	500
28 days	700

4. USES

Celtite 10-60 CELROC RPM is ideal for all-weather highway and bridge deck patches, pavement joint repair and highway structural repair. CELROC RPM's fast-setting and high early-strength properties eliminate prolonged lane shutdown and resulting traffic tie-ups.

Setting time
ASTM C 266

	<u>Min</u>
Initial	16
Final	28

Other applications of CELROC RPM include repairs of parking decks, ramps, warehouse and industrial floors, airport runways and taxiways, truck docks and commercial freezer rooms.

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Preparation: The substrate must be structurally sound; remove all disintegrated or unsound concrete from the area to be patched. Remove dust, oil, grease, and other contaminants. Edges of the area to be patched must be vertical, steep angle cut or chipped to a min depth of 1/2 in. Do not feather edge.

5. MANUFACTURER'S TECHNICAL DATA

Yield: One 50-lb bag yields approximately 0.40 cu ft.

Wire brush or sandblast all exposed reinforcing to remove rust. Do not

use a bonding agent on the steel. Use a bond breaker at all moving joints.

Flush the patch area with clean water to remove all dust and to dampen the concrete. Prior to placement of 10-60 RPM remove all excess water. For maximum bond the area to be patched with 10-60 CELROC RPM must be kept damp.

Mixing: Use a mortar-type or standard concrete-type mixer to ensure optimum blending. Job size will dictate the capacity of mixer. For mixing less than a 50-lb bag, use a power drill with a Jiffler-type mixing blade. Do not mix 10-60 RPM by hand.

Do not use 10-60 CELROC RPM for patches less than 1/2 in. deep. For applications over 2 in. deep, extend 10-60 RPM by adding up to 30 lb of clean, well-graded 3/8-in. aggregate per 50-lb bag. Use 5-1/2 pt of water with this mixture. However, to obtain proper workability for individual jobsite conditions, add water (up to 1/2 pt) after initial 3-min mixing. If the aggregate is damp or the mixture appears too wet, adjust the water content on subsequent mixes. Always follow this mixing order:

- a. Pour 5-1/2 pt of clean water per 50-lb bag of 10-60 RPM into the mixer.
- b. If required, add aggregate.
- c. Add 10-60 RPM. Mix until thoroughly wet - a minimum of three minutes.

Placement: 15 min is allowed to mix, place and finish 10-60 CELROC RPM in normal temperatures (72°F).

Immediately place the properly mixed 10-60 CELROC RPM into the prepared area, working from one side to the other. Work and tamp the material firmly into the bottom and sides of the patch area to assure good bond.

Screed and trowel the material level to the existing concrete. Seal the edges and saw cuts with slight troweling. Minimal finishing is required. When properly leveled, 10-60 CELROC RPM may be brushed to obtain an antiskid surface.

To prevent build up, clean tools and mixer frequently with water.

Curing: Celtite 10-60 CELROC RPM does not require the use of a wet cure or a curing compound.

The composition of the product develops its own built-in curing membrane during the initial set.

Hot and cold weather: The set time of 10-60 CELROC RPM is dependent on the temperature of the mixture and the area to be repaired. However, because 10-60 CELROC RPM is a versatile single system product, it is not necessary to use a different formula for hot and cold weather.

Celtite 10-60 CELROC RPM set time is influenced by the temperature of all the associated materials, including mixing water, as well as the amount of water.

Hot weather (over 85°F) decreases set time. Set time can be retarded by

- a. Cooling the 10-60 CELROC RPM and aggregate.
- b. Cooling the mixing water.
- c. Increasing the water a maximum of 1/2 pt per bag of 10-60 CELROC RPM.

Cold weather (below 40°F) increases set time. Set time can be accelerated by

- a. Heating patch area until warm to the touch.
- b. Warming the 10-60 CELROC RPM and aggregate.

- c. Tenting or insulating the patch area to retain heat. (A more rapid strength development after initial set will result.)
- d. Not using antifreeze or accelerator.

7. CORPS OF ENGINEERS' EVALUATION

This material was evaluated by Singleton Laboratories, TVA, through a support agreement with the US Army Engineer Waterways Experiment Station.*

<u>Property</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi	ASTM C 109	8,850
Slant-shear bond strength, psi	ASTM C 882	
Dry surfaces		3,240
Wet surfaces		2,430
Bond capacity in direct tension, psi	**	195
Bond capacity under flexural stress, psi	ASTM C 293	1,320
Underwater abrasion loss, %	CRD-C 63	12
Resistance to cycles of freezing and thawing, % of original weight after 312 cycles	ASTM C 666 Procedure A	100
Impact resistance, in.-lb	--	227
Coefficient of thermal expansion, millionths/°F	--	4.0

* Best, Floyd J., and McDonald, James E. 1990. "Spall Repair of Wet Concrete Surfaces," Technical Report REMR-CS-25, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

** Causey, F. E. 1984. "Preliminary Evaluation of a Tension Test for Concrete Repairs," Report Gr-83-14, Department of the Interior, Bureau of Reclamation.

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated

as potentially hazardous toxic materials.

9. AVAILABILITY AND COST

Celtite 10-60 RPM can be purchased from manufacturer in 50-lb polyethylene bags. Cost is approximately \$15 plus shipping per bag.