



CHEM-CRETE® CEMENTIX® CEM 20M

Cementitious Powder Addition to Concrete Mixtures for Rapid Pavement Repair

PRODUCT DESCRIPTION

CHEM-CRETE® CEMENTIX® CEM 20M, is a unique, durable and high strength, cementitious powder product that is ready-to-add to a specific concrete mixture for rapid repair of concrete pavement. It is a dry powder mixture composed of specialty mineral powders integrated in environmentally friendly product. CHEM-CRETE® CEMENTIX® CEM 20M is designed to be used as a powder addition for preparing concrete mixture specified in table 1 for patching of pavements after it is added to the concrete mixture. For some applications, a lower w/cm ratio can be used (e.g. 0.36).

Table 1: Mix Design of CEMENTIX® Based Concrete for Pavement Repair

Content	lb/yard ³	kg/m ³
Coarse Aggregates (#89 Stone)	1890	1,120.8
Fine Aggregates (Concrete sand)	648	384.3
Portland Cement (Type I)	432	256.2
CementiX CEM 20M	648	384.3
Total Cementitious Materials (cm)	1080	640.4
Water (w)	421	250.0
w/cm Ratio	0.39	0.39

CEMENTIX® Based Concrete is a workable and a very fast curing concrete that achieves a compressive strength higher than the typical requirement of 20M in two hours. Then, the CEMENTIX® Based Concrete mixture provides a solution to the problem of pavement closure for repair and curing.

FIELDS OF APPLICATION

CHEM-CRETE® CEMENTIX® CEM 20M can be used for preparing concrete for repair and patching materials for all types of concrete pavement applications. It is significantly a cost-effective product for the repair of:

- Airports
- Ports
- Sidewalks & drives
- Highways
- Bridges
- Parking surfaces

FEATURES, ADVANTAGES & BENIFITS

CEMENTIX® CEM 20M-Based Concrete (described in Table 1) has the following advantages

- Compatible with concreting materials, 100% green and environmentally friend.
- Easy to mix and apply.
- Applicable to all types of concrete pavement structures.
- High workability with a slump in the range of 3-5 inch (7.6-12.7 cm).
- Sufficient time after mixing for placement (25 minutes).
- Minimal temperature rise
- Achieves very rapid strength gain (about 40 MPa (5800 Psi) within the first 2-4 hours according to ASTM C 39). The early strength development for as shown in Table 2.

Table 2: Early Compressive Strength of CEMENTIX® Based Concrete (described in Table 1) (according to ASTM C 39)

Age Hours	Compressive Strength	
	Psi	MPa
2	5760	39.7
3	5860	40.4
4	6170	42.5

- Achieves a very fast curing concrete with a rapid development compressive strength curve as shown in Fig. 2.

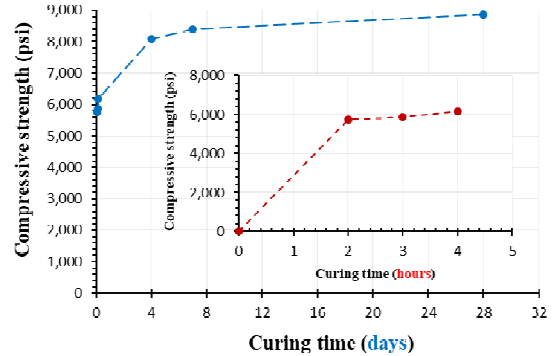


Fig. 1: The development of compressive strength (according to ASTM C39) for the Mix Design of CEMENTIX® Based Concrete shown in Table 1

- Meets the requirements for the Modulus of Rupture (see Fig.3)

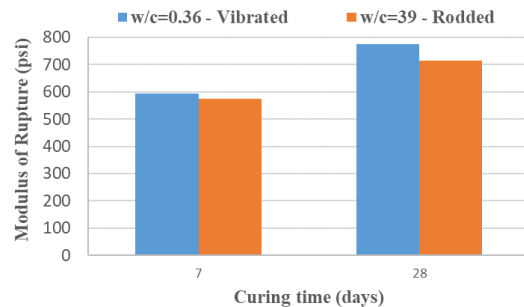


Fig.2: The Modulus of Rupture for the Mix Design of CEMENTIX® Based Concrete shown in Table 1 according to ASTM C 78

PACKAGING

Product	Packaging
CEMENTIX® CEM 20M	50 lbs (22.68 KG) BAG
	2200 lbs (1000 KG) SUPER SACK

TECHNICAL DATA

Physical Properties @ 77°F (25°F)

Bulk Specific Gravity	
Color	Grey
Environmental Hazards	None
Working time after mixing (Initial Setting Time @ 77°F (25°C) ASTM C403)	25 minutes
Maximum curing temperature	50 °C
Toxicity	None
Fumes	None
Flammability	None

Product Performance: CHEM-CRETE® CEMENTIX® CEM 20M is testable according to the following test standards:

- ASTM C172 / C172M Standard Practice for Sampling Freshly Mixed Concrete.

- ❑ ASTM C143 / C143M Standard Test Method for Slump of Hydraulic Cement Concrete
- ❑ C31/C31M – 19 Standard Practice for Making and Curing Concrete Test Specimens in the Field
- ❑ ASTM C192/C192M-14 Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
- ❑ ASTM C231 / C231M Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
- ❑ ASTM C39/C39M-18 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens ASTM D4541-95 Pull-Off Strength of Coatings Using Portable Adhesion Testers.
- ❑ ASTM C1064 / C1064M Standard Test Method for Temperature of Freshly Mixed Hydraulic Cement Concrete.
- ❑ ASTM C1542/C1542M-19 Standard Test Method for Measuring Length of Concrete Cores.
- ❑ ASTM C617-10 Standard Practice for Capping Cylindrical Concrete Specimens.
- ❑ ASTM C138 / C138M Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.

CLEANING

All tools and equipment must be cleaned with clean water immediately after use.

STORAGE

CHEM-CRETE® CEMENTIX® CEM 20M must be stored in a dry environment under and room temperature.

SAFETY PRECAUTIONS

As with all construction chemical products, adequate precautions and care must be taken during usage and storage. Avoid direct contact with

foodstuff, eyes, skin, and mouth. Any direct contact with skin should be washed thoroughly with clean running water and soap.

Always wear protective goggles and gloves. In case of eye contact, flush for 15 minutes with warm water. If eye irritation persists, seek medical attention. In case of ingestion or swallowing, drink 2 glasses of clean water and seek medical attention. Keep out of reach of children.

TECHNICAL ASSISTANCE

Please contact International Chem-Crete Corporation for Technical Personnel.

WARRANTY

LIMITED WARRANTY: International Chem-Crete Inc. warrants that, at the time and place we make shipment, our materials will be of good quality and will conform to our published specifications in force on the date of acceptance of the order.

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