Atlas Minerals & Chemicals, Inc.

DATA SHEET

3-12DN (1-98)
Supersedes 3-12DN (9-94)

SPECIFICATION - CONCRETE FLOOR SLABS

Industrial floors which require corrosion protection should be constructed of reinforced concrete in order to provide the best base for the application of corrosion resistant products. The following specifications must be met:

I. COMPOSITION SPECIFICATION

a. Portland Cement - Shall conform to Specifications for Portland Cement, ASTM C150, and can be used if less than a 28 day cure period is available.

b. Slab Aggregates - Fine aggregate shall consist of clean hard sand or crushed stone screenings free from dust, clay, loam or vegetable matter and shall be graded from coarse to fine to meet the following requirements:

Passing 3/8" sieve	100%
Passing No. 4 sieve	95% - 100%
Passing No. 8 sieve	80% - 100%
Passing No. 16 sieve	50% - 85%
Passing No. 30 sieve	25% - 60%
Passing No. 50 sieve	10% - 30%
Passing No. 100 sieve	2% - 10%

Course aggregate shall consist of clean, hard gravel or crushed stone free from dust, clay, loam or vegetable matter and from coatings which will tend to weaken the bond. It shall contain no soft, flat or elongated fragments.

The course aggregate shall conform with ASTM C33. The maximum diameter of the coarse aggregate should not exceed 1/5 the narrowest dimension of the concrete member and not exceed 3/4 of the minimum clean spacing between reinforcing bars.

c. Fill Aggregate - Fine aggregate for concrete fill on floor slabs shall be graded from coarse to fine to meet the following requirements:

Passing 3/8" sieve	100%
Passing No. 4 sieve	95% - 100%
Passing No. 16 sieve	45% - 65%
Passing No. 50 sieve	5% - 15%
Passing No. 100 sieve	0% - 5%

d. Water - Shall be clean, fresh and free from injurious amounts of mineral and organic substances.

e. Reinforcing Steel - Concrete shall be suitably reinforced in accordance with ASTM A615, A616, A617 and A185.

f. Curing Agents - Concrete shall be properly cured by wetting with water or by using non-bonding sealing layers. No membrane forming liquid compounds shall be used.

g. Mixing - The mixing of all concrete shall continue for at least one minute after all ingredients are in a stationary mixer. Ready-mixed concrete shall be batched, mixed and delivered in accordance with ASTM C94.

II. FINISHED FLOOR

a. Surface - Shall be finished by tamping the concrete to force the coarse aggregate away from the surface. It should then be screeded and floated with straight edges to bring the surface to the required finish level.

After the proper leveling of the concrete, it shall be wood float finished, followed by a single pass metal trowel finish to produce a relatively laitance-free substrate. It is recommended practice when installing a thin set adhesive direct bonded floor to lightly grit blast the surface to remove laitance and provide a sound substrate. Lubricants or release agents shall not be used on tools or on forms during the placing and the finishing of the concrete.

The vertical surfaces of piers and curbs should be poured against plywood forms supported from the outside so that there are no depressions from bolts. All depressions must be carefully filled and all high spots removed with a carborundum stone. The concrete must also be properly puddled to prevent formation of honeycomb.

b. Tolerance - For proper floor drainage the concrete floor base shall slope uniformly maintaining a slope of 1/4 inch per foot, and in no case less than 3/16 inch per foot. All floors shall be free from high and low areas and parallel to the final flow.

When drains are necessary, a flanged drain of material inert to the environment must be used. The top of the drain must be 1/8 inch

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below the finished surface of the brick or topping. The drain must be firmly imbedded in the concrete and the membrane or a bond coat must be applied so that the flange is covered but the weep holes are left open.

A maximum variation from a true plane, not greater than 1/8 inch, is allowable as measured under an 8 foot long straight edge.

In order to determine if the concrete has cured sufficiently so that the membrane or bond coat may be applied, a rubber mat should be placed on the concrete surface overnight. If it is dry underneath the mat the following morning, the membrane or bond coat may be installed after the surface has been swept free of dust, dirt and loose particles.

III. STRENGTH REQUIREMENTS

a. The concrete shall be proportioned as to secure a minimum compressive strength of 3,000 psi, after 28 days of curing. The concrete mixture shall be determined by the architect or engineer in charge of design and once established shall not be changed.