

Technical Bulletins

Constructing & Commissioning Freezers Treated With An allnex Floor Topping



Constructing & Commissioning Freezers treated with an allnex floor topping must be well managed and planned. Incorrect applications, applications at incorrect temperatures will lead to delamination and premature failure.

Rapid thermal shocking can damage the concrete substrate and /or the allnex floor topping, therefore the commissioning process of a freezer is very critical to avoid undue stresses and prevent possible structural damage to the concrete floor slab and/or the allnex floor topping.

We are unaware of any industry standard for the commissioning process so we have listed below the critical aspects and procedures that have proved successful over many years.

Basic Requirements for the Concrete Floor Slab

- Must be minimum 25mpa compressive strength.
- Must be cured minimum 28 days.
- Moisture content less than 75% RH, 18% WME or 4% actual moisture content.

Note:

Trapped moisture will expand within the concrete when frozen, the concrete must be able to withstand the tensile forces created.

allnex floor topping

- Installation must be carried out at ambient temperature +10°C (resin floor topping will not cure at temperatures below 5°C)
- Once installed it is very important that the topping is allowed to fully cure at the ambient positive temperature and become stable before reducing the temperatures or putting the freezer back into service.. Full cure generally takes 5 - 7 days at >20°C/75% RH.
- Once fully cured,
- The designed topping will be able to operate in a freezer range -50°C – +25°C.
- However it is important to avoid rapid constant temperature cycling, decreasing and increasing of the freezer temperature should be controlled and carried out over a 24 hour period.

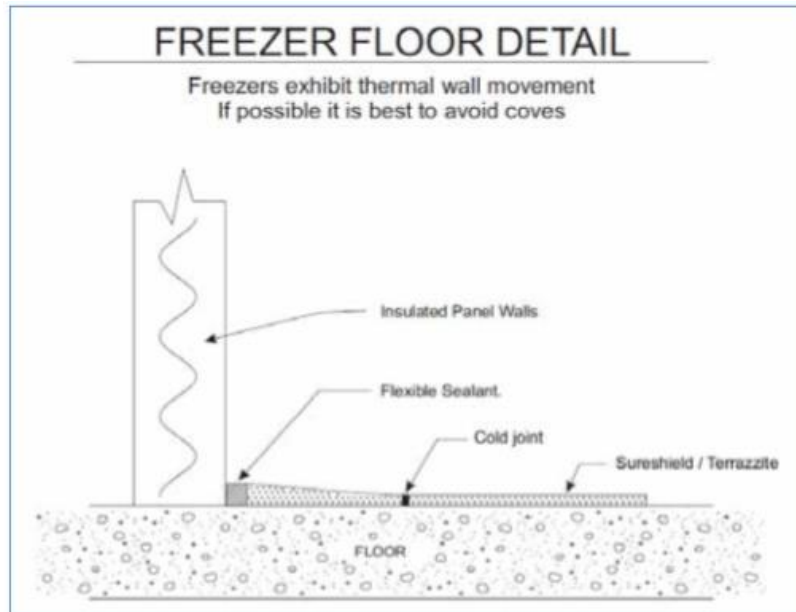
Cove details

It is considered best practice to isolate the floor from the freezer walls to avoid cracking due to differential movement or compression of the insulation under the floor when fully loaded.

Cracking from walls or the concrete substrate that reflect through the topping are not floor topping failures.

Cove Isolation Options;

- a. Using a flexible adhesive;
adhere a cove support plate to the surface of the freezer panel walls,
apply the cove over the support plate, thereby isolating the cove from the wall to allow for differential movement.
Install a cold joint at the foot of the cove for complete separation.
- b. No Cove Details, See freezer detail drawings below.



Freezer Commissioning Process

The condensers in the freezer units are very effective at removing moisture from concrete and may be utilised to speed the dry of the concrete floor slab.

Once the new topping has been installed and allowed to cure the freezer can be commissioned;

- Step 1 Lower temperature to 0°C and hold for 2 days.
- Step 2 Lower temperature at 5°C increments and hold for 2 days at the temperature.
- Step 3 Repeat the process until required temperature is achieved.

For further advice or information do not hesitate to contact the allnex technical team.

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