

CONSTRUCTING & COMMISSIONING FREEZERS TREATED WITH A NUPLEX FLOOR TOPPING

The commissioning process is very critical to avoid undue stresses and prevent possible structural damage to the concrete floor slab and/or the Nuplex floor topping. Rapid thermal shocking will damage the concrete substrate.

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

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.

NUPLEX FLOOR TOPPING

- Fully cured and stable: It is very important that the topping is allowed to fully cure and become stable before dropping the temperature. Having a warmed area to enable full curing is important 20-24c. Once fully cured, Sureshield, eg will be able to operate in a freezer range -50c to 0c. However it is important to avoid constant temperature cycling. Cracking from walls and cracks arising in the concrete are not floor material faults.
- Must be fully cured. Once the temperature is lowered below 5°C curing will cease.
- Full cure generally takes 5-7 days at >20°C/75% RH.
- Floor toppings must be isolated from freezer walls to avoid cracking due to differential movement or compression of the insulation under the floor when fully loaded.
Options include:
 - Aluminium cove section fixed to wall and sealed to floor.
 - Refer details page 2.

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.

Step 1

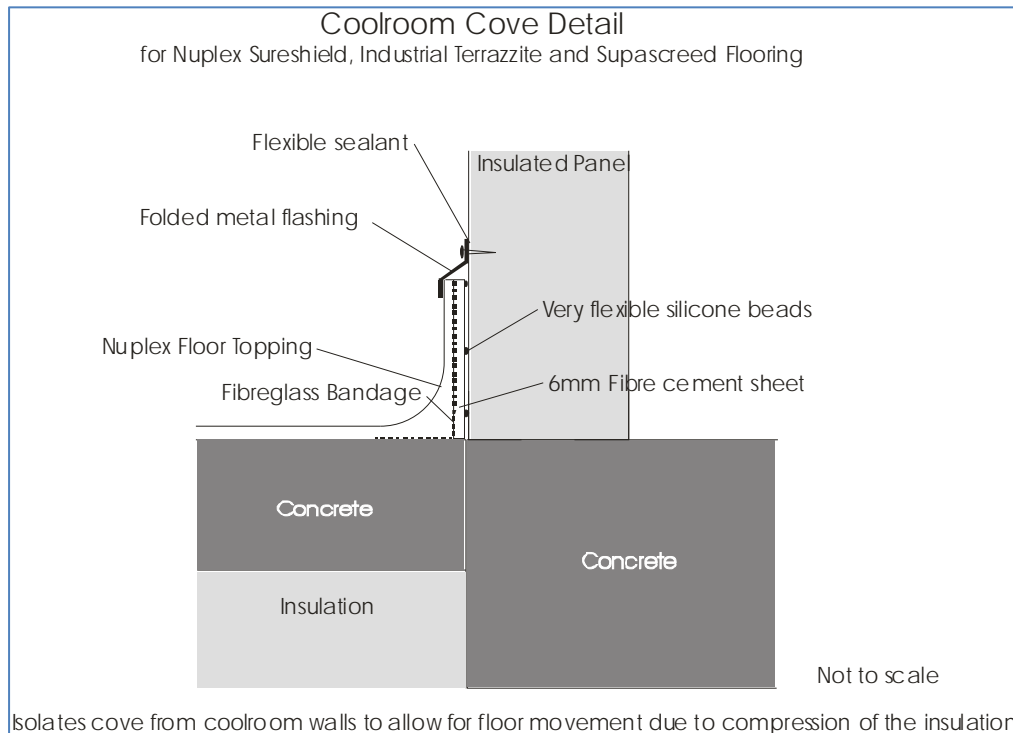
Lower temperature to 0°C and hold for 2 days.

Step 2

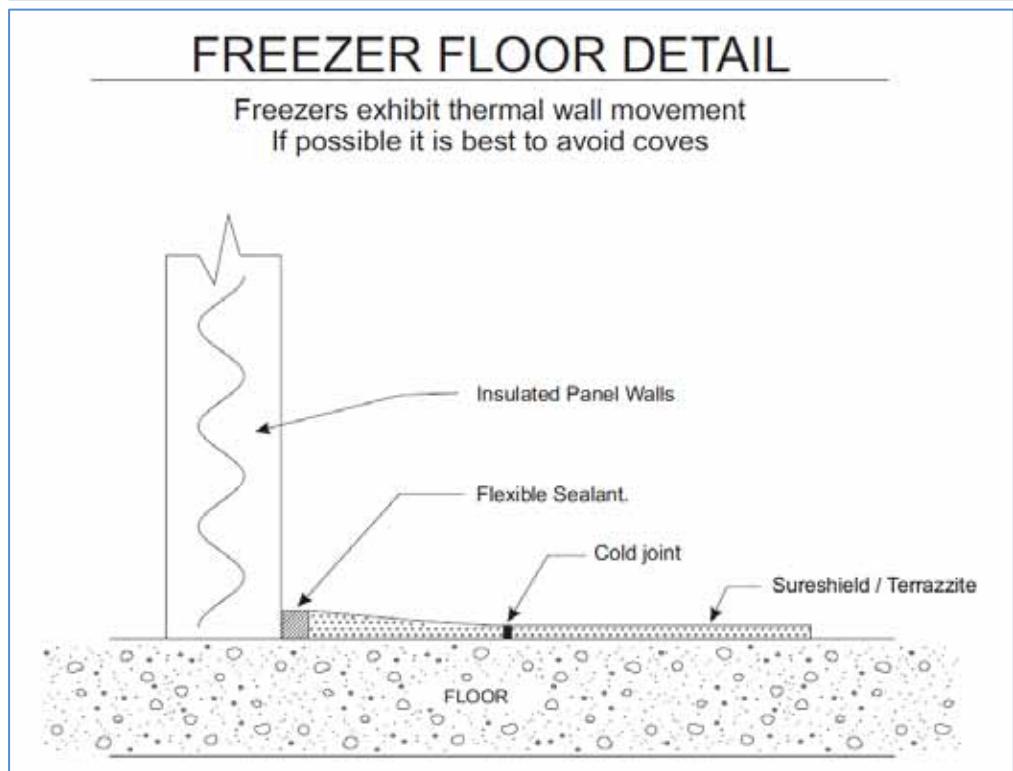
Lower temperature at 5°C increments and hold for 2 days at the temperature.

Step 3

Repeat the process until required temperature is achieved.



Isolates cove from coolroom walls to allow for floor movement due to compression of the insulation



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