



## PERMANENT INTERNAL & EXTERNAL CONCRETE PROTECTION FOR COLD STORAGE SYSTEMS

### Description & Uses

X-20 Coolroom & Freezer is a two component, dual application system specifically designed to protect concrete in cold storage facilities. The first, Part A, application penetrates deeply into the concrete matrix providing permanent water proofing, curing and protection from contamination ingress. The second, Part B, application provides surface sealing and oil resistance.

### Features and Benefits

#### Part A

- Permanently waterproofs concrete from any direction.
- Makes concrete impermeable, increasing longevity.
- Exceptional densifier and hardener for concrete.
- Increases tensile & compressive strength.
- Resists freeze thaw damage.
- Retards efflorescence.
- Zero VOC, environmentally friendly, user safe.
- Minimum site disruption, trafficable after 2 hours.
- Stabilises pH.
- Will cure concrete equal to water pond curing.
- After trade friendly.

#### Part B

- Seals surface and resists oils
- Preserves original appearance.
- Enhances traction quality.
- More stain resistance surface.
- Easier ice/snow removal.
- Retards/Eliminates efflorescence.
- Highly resistant to alkali attack.
- Improves fungus / mildew resistance.
- UV resistant.
- Odourless, zero VOC.

### Physical and Chemical Properties

#### Part A

<b>Appearance:</b>	Low viscosity clear blue liquid.
<b>Odour:</b>	Almost none.
<b>pH:</b>	Ca. 11.4.
<b>Boiling Range:</b>	> 100°C @ 760 mm Hg.
<b>Solubility:</b>	Fully miscible in water.
<b>Specific Gravity:</b>	Ca. 1.10.
<b>Flash-point:</b>	Not applicable.
<b>Flammability:</b>	Not applicable.
<b>Auto Ignition Temperature</b>	
<b>Stability:</b>	Product is not self-igniting. Stable under normal conditions.
<b>Chemical Stability:</b>	Stable and normal temperatures and pressure.
<b>Dangerous Reactions:</b>	Strong exothermic reaction with acids. Reacts with light alloys to form hydrogen.
<b>Materials to Avoid:</b>	Avoid contact with Acids, light alloys.

#### Part B

<b>Appearance:</b>	Low viscosity clear liquid.
<b>Odour:</b>	Almost none.
<b>pH:</b>	Ca. 11.4.
<b>Boiling Range:</b>	> 100°C @ 760 mm Hg.
<b>Solubility:</b>	Fully miscible in water.
<b>Specific Gravity:</b>	Ca. 1.09.
<b>Flash-point:</b>	Not applicable.
<b>Flammability:</b>	Not applicable.
<b>Auto Ignition Temperature</b>	
<b>Stability:</b>	Product is not self-igniting. Stable under normal conditions.
<b>Chemical Stability:</b>	Stable and normal temperatures and pressure.
<b>Dangerous Reactions:</b>	Strong exothermic reaction with acids. Reacts with light alloys to form hydrogen.
<b>Materials to Avoid:</b>	Avoid contact with Acids, light alloys.

## Recommended Substrate Conditions & Preparation

	Part A	Part B
<b>Freshly Placed Concrete:</b>	4.0m <sup>2</sup> per litre.	5.0m <sup>2</sup> per litre
<b>Existing Concrete:</b>	4.0m <sup>2</sup> per litre	5.0m <sup>2</sup> per litre

### Important Notes:

1. Wax, paint, curing compounds or a burnished surface restricting access to concrete's interior must be chemically or mechanically removed for Oxtek X-20 Coolroom & Freezer to penetrate and work properly. To test for adequate porosity apply droplets of water on the concrete surface, if the droplets do not penetrate into the concrete within 2 minutes then Oxtek X-20 Coolroom & Freezer will not function properly and may be ineffective.
2. Areas of high porosity have a faster penetration rate. These areas appear dry immediately after spraying and will require

additional product. If the Part B product dries on the surface it will repel itself, be quick if a top up is required.

3. Do not apply on frozen substrate or when temperature is below 3°C and getting colder.
4. Oxtek X-20 Coolroom & Freezer may etch glass/tiles or dull brushed and shiny aluminium and can be difficult or impossible to remove from other surfaces once it dries. Cover and mask surrounding surfaces or rinse off immediately if sprayed.
5. Concrete being treated must be fit for purpose for proper function of Oxtek X-20 Coolroom & Freezer. Structural, control and cold joint or large cracks will not be repaired with a Oxtek X-20 Coolroom & Freezer application.

We recommend the use of a painters mask during application. Refer to MSDS available from [www.oxtekaus.com](http://www.oxtekaus.com)

## Application Guide

### Part A

#### On Already-Set Concrete:

Application is by pour or low pressure spray (pumpup knapsack type). It is required that Oxtek X-20 Coolroom & Freezer Part A is distributed evenly by continuous working by soft broom in all directions to ensure the product is presented to all surface profile levels. There is no need to put any pressure on the broom as it is only used to distribute the product evenly and if pressure is applied it tends to have the opposite effect in not leaving enough material on the surface. Recommended coverage rate is 4.0m<sup>2</sup> per litre. Allow material to penetrate (drop in) the surface and if you find that some areas have totally dropped and some not, then distribute the excess product over the dry areas. Please note, on occasions, the concrete may be of poor quality and be very porous which may require additional product to ensure that there is enough product to complete the capillary chemical gel forming reaction.

Do not allow product to puddle dry on the surface. If product gels on the surface remove with a squeegee.

#### As a Cure Method at Time of Pour:

Apply with a low-pressure non-atomizing, spray apparatus such as a pump-tank sprayer. Allow Oxtek X-20 Coolroom & Freezer Part A to penetrate (drop in) the surface and if you find that after an hour that some areas have totally dropped in and some not then distribute the excess product over the dryer areas. For optimum cure benefits it is ideally applied to the newly-poured concrete surface as soon as is practical following its surface finishing phase. Should conditions require the surface to be walked on, for application, concrete should be allowed the time to adequately set, so as not to imprint or mar its surface during application. Recommended minimum coverage rate is 4.0m<sup>2</sup> per litre.

### Part B

To be used after successful application of and full penetration of Oxtek X-20 Coolroom & Freezer Part A.

Protect (mask) areas that are not intended for application as product will damage their surfaces permanently i.e. glass, tiles, aluminium, plants etc.

Remove all dusts, dirt, stains, glues and previous coatings. Apply Oxtek X-20 Coolroom & Freezer Part B with a non-atomizing pump sprayer. Apply evenly at 5.0 m<sup>2</sup> per litre.

Do not allow to puddle dry otherwise a white precipitate may be left that will be difficult to remove.

Oxtek X-20 Coolroom & Freezer Part B should not be allowed to dry on glass/tiles or polished aluminium as an etching effect will occur. It is important to cover first or remove by water wash before drying occurs. Do not walk on adjacent finished surfaces, with foot wear contaminated with product, as marking may be permanent.

Allow 24 hours to dry thoroughly.

#### Hot and Cold Temperatures:

In hot windy conditions, the concrete surface temperature or wind may dry out the product prematurely before it has a chance to drop in effectively, in this case it is advisable to mist spray the concrete surface with water and apply Oxtek X-20 Coolroom & Freezer whilst the surface is damp but not puddled. This also helps with a relaxation of surface tension allowing a more efficient and faster penetration as well as premature evaporation or drying out.

Oxtek X-20 Coolroom & Freezer should not be applied if the ambient temperature is below 3°C and falling, call your Oxtek office for guidance.

Oxtek X-20 Coolroom & Freezer is not effected at all by temperature change 24 hours after application, not even freeze thaw conditions.

#### Clean Up:

Clean up with water.

## Additional Data and Precautions

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### Available in 5 and 15 litre containers.

1. Any coatings, wax, curing compounds or burnished surface that may restrict penetration access to the concrete's interior must be chemically or mechanically removed for Oxtek X-20 Coolroom & Freezer to penetrate.
2. Protect areas not intended for coverage. Do not walk product onto any adjacent surfaces as permanent marking may result
3. Oxtek X-20 Coolroom & Freezer may etch glass/tiles or dull shiny aluminium and can be difficult to remove from other surfaces once it dries.
4. Do not apply on frozen substrate or when temperature is near freezing. Only apply if temperature is  $3^{\circ}\text{C}$  and rising. Do not apply if rain is expected within the next 3 hours. Do not apply in full sun exposure or to hot surfaces exceeding  $34^{\circ}\text{C}$

5. As good safety practice we do recommend the use of a face mask during application. Incidental skin contact should not be hazardous, however ingestion or eye contact is to be avoided. Refer to MSDS.

6. Restrict access to areas being treated as surface may be slippery until all product has dropped in or been removed from the surface.

7. Do not apply by dipping broom or brush directly into the pail as this will contaminate the product. Only and pour and spread or spray. Do not roller apply.

8. For more information read Material Safety Data Sheet available at [www.oxtekaus.com](http://www.oxtekaus.com)

Call Oxtek Australia if unsure of application, after reading this Data Sheet, on 1300 698 351 - 1300 oxtek1

## Testing and Certifications



Test		Control Sample*	X-20 Coolroom Freezer Sample	Results Comparison
Designation	Property			
AS1012.9 ASTM C39	Compressive Strength	28.9 MPa 4,191 psi	31.0 MPa 4,496 psi	<b>7% Increase</b>
AS 1012.8 ASTM C78	Flexural Strength	2.52 MPa 365 psi	2.89 MPa 419 psi	<b>15% Increase</b>
Chaplin Abrader	Abrasion Loss	2.47 mm 0.10 in	1.46 mm 0,06 in	<b>41% Reduction</b>
Surface Dusting		2.57 g/0.25m <sup>2</sup>	1.78 g/0.25m <sup>2</sup>	<b>31% Reduction</b>
ASTM C 1202	Rapid Chloride Penetration	597 / 543 / 10,097 Coulombs	148 / 136 / 6,582 Coulombs	<b>35% to 75% Reduction</b>
HKHA B2.9	Sorptivity	0.164 mm/(min) <sup>1/2</sup>	0.010 mm/(min) <sup>1/2</sup>	<b>94% Reduction</b>
ACCI Water Permeable Test	Water Permeability	1.5 x 10 <sup>-13</sup> m/s	2.5 x 10 <sup>-14</sup> m/s	<b>83% Reduction</b>
USACOE C48	Water Permeability	NA	<b>0 Leakage @ 30.5 m Head Pressure 0 Leakage @ 100 ft Head Pressure</b>	
DIN 1048	Water Permeability	98.4 mm @ 0.33 hrs 3.9 in @ 0.33 hrs	5.5 mm @ 72 hrs 0,22 in @ 72 hrs	<b>94% Reduction</b>
ASTM C666	Mass Loss @ 300 Freeze/Thaw Cycles	4.80%	0.70%	<b>85% Reduction</b>

\*Note - All control samples were moisture cured.

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