

**ZER-O-LOC PRODUCT & APPLICATION MANUAL**

**INCLUDING**

**PRODUCT CARE**

**PRODUCT APPLICATIONS**

**PRODUCT INFORMATION**

**PRODUCT DISCLAIMERS & LIMITS OF LIABILITY**

September 2003

**TABLE OF CONTENTS**

- 1.00 ZER-O-LOC BLAST FREEZER, SPIRAL FREEZER, & FREEZER TUNNEL ENCLOSURE APPLICATIONS – DAMAGE FROM “THERMAL SHOCKING”
- 2.00 PANEL JOINT SILICONE CAULKING – APPLICATION, CARE, AND MAINTENANCE
- 3.00 CEILING PANEL SYSTEM - AIR CIRCULATION ABOVE
- 4.00 CEILING PANEL SYSTEM - LOADING
- 5.00 ZER-O-LOC SCOPE OF WORK SHOP DRAWINGS
- 6.00 APPLICATIONS/PROJECT ENGINEERING
- 7.00 INSTALLATION OF ZER-O-LOC INSULATED PANELS, DOORS AND RELATED ACCESSORIES
- 8.00 MISUSE, MISAPPLICATION AND/OR ABUSE OF ZER-O-LOC PRODUCTS
- 9.00 WASHDOWN OF STANDARD ZER-O-LOC PREPAINTED G90 GALVANIZED STEEL SKIN SURFACED INSULATED PANELS
- 10.00 FREEZER VENTILATION
- 11.00 INFORMATION ON FREEZER FLOOR FROST PREVENTION SYSTEMS
- 12.0 FLOOR PANELS

PAINT DICLAIMER

**1.00 ZER-O-LOC BLAST FREEZER, SPIRAL FREEZER, & FREEZER TUNNEL ENCLOSURE APPLICATIONS – DAMAGE FROM “THERMAL SHOCKING”**

1.01 Zer-O-Loc insulated wall and ceiling panels used for blast freezer, spiral freezer, freezer tunnel, etc. enclosures must not be “thermal-shocked” with extremely hot, scalding hot, or boiling hot water or steam during cleaning.

- If possible, allow the panel enclosure adequate time to warm up after freezing cycles before cleaning.
- Use warm to moderately hot water for cleaning only. Extremely hot, scalding hot, or boiling hot water may cause the metal skins to delaminate from the insulation.
- Use a non-corrosive anti-bacterial cleaning agent rather than hot water or steam to clean the metal-skinned Zer-O-Loc insulated wall and ceiling panels.

1.02 The Zer-O-Loc Standard Panel Products Warranty shall become null and void if damage occurs to Zer-O-Loc insulated wall and ceiling panels due to thermal shock.

1.03 Please contact your Zer-O-Loc representative for details.

**2.00 PANEL JOINT SILICONE CAULKING – APPLICATION, CARE, AND MAINTENANCE**

2.01 Federal and independent food plant inspection agencies and organizations may specify that all exposed panel joints within food preparation and processing rooms are sealed with a food-grade silicone caulking.

2.02 In high wash-down areas, the panel joint silicone caulking may blow out of the panel joints when exposed to high-pressure washing devices. It should be expected that as a part of general plant maintenance, high wash-down rooms and areas constructed with insulated panels will have to be recaulked from time to time. The frequency of recaulking is directly related to the methods and frequency of washing.

2.03 RECAULKING OF EXPOSED PANEL JOINTS DOES NOT FALL UNDER THE STANDARD ZER-O-LOC PRODUCTS WARRANTY UNDER ANY CIRCUMSTANCES.

2.04 To reduce the time frame between recaulking, the following steps may be taken to extend the life of panel joint caulking:

- When designing and constructing high wash-down rooms with metal-skinned insulated panels, be sure to specify proper panel joint caulking application details and procedures for the panel installation company to follow (contact Zer-O-Loc for more details).
- For new construction, select an experienced panel installation company that has had extensive experience in the application of silicone caulking to panel joints.
- Be sure to select a food-grade silicone caulking. Follow the application procedures recommended by the caulking manufacturer. Ensure that such application procedures are specified and followed by both the panel installers and upon completion of panel installation the plant maintenance supervisor.
- When recaulking during plant maintenance, ensure that the panel joint surface is clean and dry before applying silicone caulking. Again, follow application procedures recommended by caulking manufacturer.
- High pressure washing of painted panel surfaces and caulked panel joints must be avoided. The nozzle of the high pressure washing device should be held at an adequate distance away from the caulked panel joint. Direct high pressure washing of the caulked panel joint will result in the premature failure of the caulking bead.

2.05 For more information, please contact your Zer-O-Loc representative.

### **3.00 CEILING PANEL SYSTEM - AIR CIRCULATION ABOVE**

3.01 When designing and constructing an interior low temperature room with insulated metal-skinned panels, care must be taken to ensure air circulation above the ceiling panels.

3.02 If dead air is allowed to accumulate above the panel ceiling, condensation will occur on the top surface of the panel ceiling. Large

accumulations of condensation could develop into pools of water. These pools of water could result in water leaks through the panel joints and other panel connections into the low temperature room below, and rusting of steel components above the panel ceiling.

3.03 This condition is a result of the moisture within the dead air condensing on the cool top surface of the panel ceiling. This condition can be prevented by ensuring strong and consistent air circulation and ventilation above the panel ceiling of the low temperature room.

3.04 This condition is not a result of inadequate insulation thickness or a leak or leaks in the vapour seal of the low temperature room. This condition can only be avoided by circulating and ventilating the air above the panel ceiling of the low temperature room.

3.05 Please contact Zer-O-Loc or an independent low temperature construction consultant for more details.

#### **4.00 CEILING PANEL SYSTEM - LOADING**

4.01 Zer-O-Loc ceiling panels and the Zer-O-Loc suspended ceiling system are non-load bearing. Do not stack or store items of any kind on top of Zer-O-Loc ceiling panels. Other trades must not place weight loads of any kind on Zer-O-Loc ceiling panels or the Zer-O-Loc suspended ceiling system (ex. refrigeration equipment, piping, etc.).

4.02 In order to safely walk upon a Zer-O-Loc panel ceiling, the Zer-O-Loc ceiling system must be specifically designated as a “walk-on” ceiling. The “walk-on” ceiling must be designed and installed as per Zer-O-Loc “walk-on” ceiling system data, details and specifications.

4.03 For “walk-on” ceilings, please ensure that the installation contractor, the general contractor or the owner posts signs at all entrance points where the “walk-on” ceiling can be accessed indicating as follows:

“WARNING – Maximum safe live load on the ceiling surface is 25 pounds per square foot. Ceiling space restricted to maintenance personnel only. Take only what you can carry onto the ceiling area. No material handling equipment or tool carts are allowed on the ceiling surface.”

4.04 Please contact your Zer-O-Loc representative for details.

#### **5.00 ZER-O-LOC SCOPE OF WORK SHOP DRAWINGS**

5.01 Zer-O-Loc shop drawings are for the exclusive use of Zer-O-Loc. Zer-O-Loc assumes no responsibility when others use Zer-O-Loc drawings for other purposes.

5.02 Zer-O-Loc drawings and details contained herein are not intended for use as installation guidelines or instructions. Zer-O-Loc drawings do not contain all details and instructions required to be used for installation of Zer-O-Loc products.

5.03 Zer-O-Loc will not be held responsible for misuse or misapplication of the Zer-O-Loc panel system or other items sold by Zer-O-Loc.

5.04 Zer-O-Loc will not be held responsible for damage to, misuse or misapplication of, or faults in installation of the Zer-O-Loc panel system or other items sold by Zer-O-Loc that may be made by installation crews other than those installation crews specifically employed or contracted by Zer-O-Loc.

5.05 Zer-O-Loc is not responsible for the load implications the panel system will produce on the structural components of the building to which the panels are attached. Information on load capabilities must be obtained from your structural engineer.

5.06 All Zer-O-Loc walls must be properly braced by General Contractor prior to pouring concrete.

5.07 All door locations to be determined and documented by the General Contractor prior to cutting door openings in panels.

5.08 Zer-O-Loc drawings submitted for approval are to be reviewed by the customer or the customer's designated project representative. All dimensions must be reviewed and any changes or corrections must be clearly indicated on the Zer-O-Loc drawings. The customer or the customer's designated project representative must also include their signature and date in reference to all changes or corrections. Zer-O-Loc panels and other items in the Zer-O-Loc Scope of Work will be

manufactured to dimensions as approved by the customer or the customer's designated project representative.

## **6.00 APPLICATION/PROJECT ENGINEERING**

6.01 Zer-O-Loc may provide product data, standard installation details, and shop drawings relating to the *Zer-O-Loc Scope of Work* for the use of the purchaser and/or the purchaser's representative (general contractor, engineer, consultant etc.).

6.02 Specific application engineering of and/or engineer's stamp on Zer-O-Loc product data, suggested Zer-O-Loc details and/or Zer-O-Loc drawings on a project by project shall be by others, unless specified otherwise.

6.03 Zer-O-Loc has not determined and is not responsible for calculating any load implications of the *Zer-O-Loc Scope of Work* as it relates to the structural integrity or any other structural aspects of the building (ex. suspended ceiling systems, snow loading, wind-loading on exterior wall panels, etc.).

6.04 Zer-O-Loc panel system data and details required for application engineering by others is available on request.

## **7.00 INSTALLATION OF ZER-O-LOC INSULATED PANELS, DOORS AND RELATED ACCESSORIES**

7.01 Zer-O-Loc installation crews are not responsible for confirming site dimensions, including wall lengths and heights, ceiling lengths and widths, door locations, door dimensions, etc. It is the responsibility of the purchaser or the purchaser's representative to confirm all site dimensions on Zer-O-Loc shop drawings relevant to the ***Zer-O-Loc Scope of Work***.

7.02 Installation, when included under ***Zer-O-Loc Scope of Work***, shall be performed during regular day-shift hours, 8 hours per shift, unless otherwise indicated. Afternoon shifts, graveyard shifts, overtime and/or weekend work will be subject to additional installation charges.

7.03 Installation, when included under ***Zer-O-Loc Scope of Work***, is quoted under the assumption that the install crew will maintain

continual progress of installation. Jobsite must be relatively free and clear of any obstacles, with easy access, and with no significant interference from other trades or production workers, unless otherwise indicated. Unforeseen obstacles, poor jobsite access, and/or interference from other trades or production workers may result in additional installation charges.

#### **8.00 MISUSE, MISAPPLICATION AND/OR ABUSE OF ZER-O-LOC PRODUCTS**

8.01 It is recommended that an experienced panel installation crew is hired to install Zer-O-Loc Insulated Panel and Door Systems. Please inquire about the Zer-O-Loc Certified Installation Contractor program.

8.02 Please note that Zer-O-Loc drawings and details are not intended for use as installation guidelines or instructions. Zer-O-Loc drawings do not contain all details and instructions required to be used for installation of Zer-O-Loc products.

8.03 Zer-O-Loc standard warranties apply to use of Zer-O-Loc products, services and systems in standard applications only, as determined by Zer-O-Loc. Zer-O-Loc will not be held responsible for failure of Zer-O-Loc products or systems due to misuse or misapplication of the Zer-O-Loc panel system or any other items sold by Zer-O-Loc.

8.04 Zer-O-Loc will not be held responsible for damage to, misuse or misapplication of, or faults in installation of the Zer-O-Loc panel system or other items sold by Zer-O-Loc that may be made by installation crews known or unknown to Zer-O-Loc, other than those specifically employed, endorsed or contracted by Zer-O-Loc.

#### **9.00 WASHDOWN OF STANDARD ZER-O-LOC PREPAINTED G90 GALVANIZED STEEL SKIN SURFACED INSULATED PANELS**

9.01 Zer-O-Loc purchases CFIA (Canadian Food Inspection Agency) and USDA (United States Department of Agriculture) compliant prepainted white 26 gauge G90 galvanized steel for use in interior panel applications. Zer-O-Loc does not apply the paint coating to the 26 gauge steel in its manufacturing facilities.

9.02 Paint manufacturers will not warrant their prepainted coating products when they are used as an interior finish. The paint industry has taken the position that they have no way of knowing what the intended use of the building or room interior will be. They also have no standard method of determining what various interior environments will be like.

9.03 While Zer-O-Loc's standard interior prepainted white finish is both a CFIA and USDA compliant polyester coating, Zer-O-Loc is not provided a warranty by the paint supplier for interior applications.

9.04 In recent years, extremely aggressive cleaning and wash-down procedures have become the norm in today's food processing facilities. Please note that the chemical composition of some cleaning agents may be corrosive to the prepainted finish and/or the G90 galvanized steel skins of the Zer-O-Loc insulated panels. Frequent washing with chemical cleaners and high-pressure hot water may prematurely erode the prepainted finish of Zer-O-Loc panels.

9.05 Please be advised that Zer-O-Loc does not offer a warranty whatsoever for prepainted metal finishes exposed to wash-down with high pressure/high temperature equipment and chemical cleaners. For these types of applications, please contact Zer-O-Loc for recommendations on other finishes such as stainless steel or factory-applied FRP, that would be better suited for these areas.

9.06 Do not commence regular washdown procedures on the prepainted G90 galvanized steel skins of the Zer-O-Loc panels without first submitting the chemical composition of the cleaning agent to Zer-O-Loc. Or, contact Zer-O-Loc for recommended wash-down procedures.

9.07 Use of cleaning agents that are corrosive to the painted finish and/or the G90 galvanized steel skins of the Zer-O-Loc insulated panels will void the Zer-O-Loc warranty on panels.

9.08 Please submit information on cleaning agents to:

**ZER-O-LOC LANGLEY, BC**  
ATTN: JASBIR TOOR  
PHONE: (604) 607-1101  
FAX: (604) 607-1142

**ZER-O-LOC BRANTFORD, ON**  
ATTN: MARY KUKIELKA  
PHONE: (519) 754-4500  
FAX: (519) 754-4214

## **10.00 FREEZER VENTILATION**

10.01 Ventilation of a freezer room or building is required for relief of air pressure differentials created within a freezer room or building. Such air pressure differentials are a function of the temperature of the product or products entering the freezer, the rate at which the product(s) will become frozen, and the specifications and design of the refrigeration equipment.

10.02 The Zer-O-Loc Warranty does not cover damage to Zer-O-Loc insulated panels and/or doors caused by inadequate ventilation of a freezer room or building.

10.03 Zer-O-Loc cannot determine ventilation requirements for freezer rooms or buildings. The purchaser and/or the purchaser's representative (engineer, refrigeration contractor and/or refrigeration consultant) must advise Zer-O-Loc of freezer room or building ventilation requirements.

10.04 Zer-O-Loc shall not be responsible for determining size of vents or required number of vents per freezer room or building. It shall be the responsibility of the purchaser and/or the purchaser's representative (engineer, refrigeration contractor and/or refrigeration consultant) to determine the size and number of freezer vents per freezer room. Upon direction from the purchaser and/or the purchaser's representative, Zer-O-Loc shall supply freezer room vents as specified.

10.05 Where ventilation requirements have not been determined by others, Zer-O-Loc will supply either one (1) only small vent or one (1) only large vent at the request of the purchaser. However, sizing and quantity of vents (small or large) ultimately must be determined and approved by the purchaser and/or the purchaser's designated representative.

## **11.00 INFORMATION ON FREEZER FLOOR FROST PREVENTION SYSTEMS**

11.01 Freezer floor areas wider and longer than 12'-0" must be designed and equipped with a freezer floor frost prevention system.

11.02 Freezer floor areas wider and longer than 12'-0" constructed directly above soil, whether in direct contact with the soil or just above the soil (e.g. on an existing concrete surface), are affected.

11.03 Failure to design and install a freezer floor frost prevention system beneath freezer floor areas wider and longer than 12'-0" will result in the development of a "frost-bulb" in the soil below. The frost-bulb in the soil results from the freezing of the moisture (i.e. water) within the soil. When water freezes, it expands. The resulting expansion of the frozen water in the soil will cause the freezer floor to rise, heave and crack. The force of this so-called "frost-heave" is significant enough to destroy concrete and lift storage racking and shelving.

11.04 Needless to say, a freezer floor destroyed by frost-heave is extremely expensive to repair, not to mention the danger to employees from falling product or storage rack collapse and the expense of storage freezer downtime during floor repairs.

11.05 A freezer floor frost prevention system is installed just below the freezer floor insulation and vapour barrier. Such a system is designed to create just enough warmth to prevent the soil from freezing. A freezer floor frost prevention system usually consists of one of the following three systems: (1) electric heater cable, (2) forced air movement, or (3) an antifreeze liquid pumped through a pipe system beneath the floor (ex. Glycol).

11.06 Frost heave is NOT a function of insulated panel, insulated door or floor insulation/vapour barrier design. Zer-O-Loc shall not be held responsible for frost-heave damage that may occur due to improper freezer floor frost prevention system design and/or owner neglect.

11.07 Please contact your nearest Zer-O-Loc representative for more information.

## **12.00 FLOOR PANELS**

12.01 Zer-O-Loc floor panels are not recommended for heavy loads and/or heavy traffic from material handling vehicles such as forklifts and pallet-jacks.

12.02 It is recommended that a concrete wear surface is installed in cooler and freezer rooms and buildings subject to heavy loads and/or heavy traffic from material handling vehicles.

12.03 Zer-O-Loc floor panels are not covered under the Zer-O-Loc Warranty against damage from heavy loads and material handling vehicles.

12.04 In the event that a floor panel system is specified, the purchaser shall be responsible for floor panel design and application. The purchaser acknowledges that a floor panel will have a limited lifetime depending on the type of floor panel reinforcement, the frequency of use and the weight of the loads.