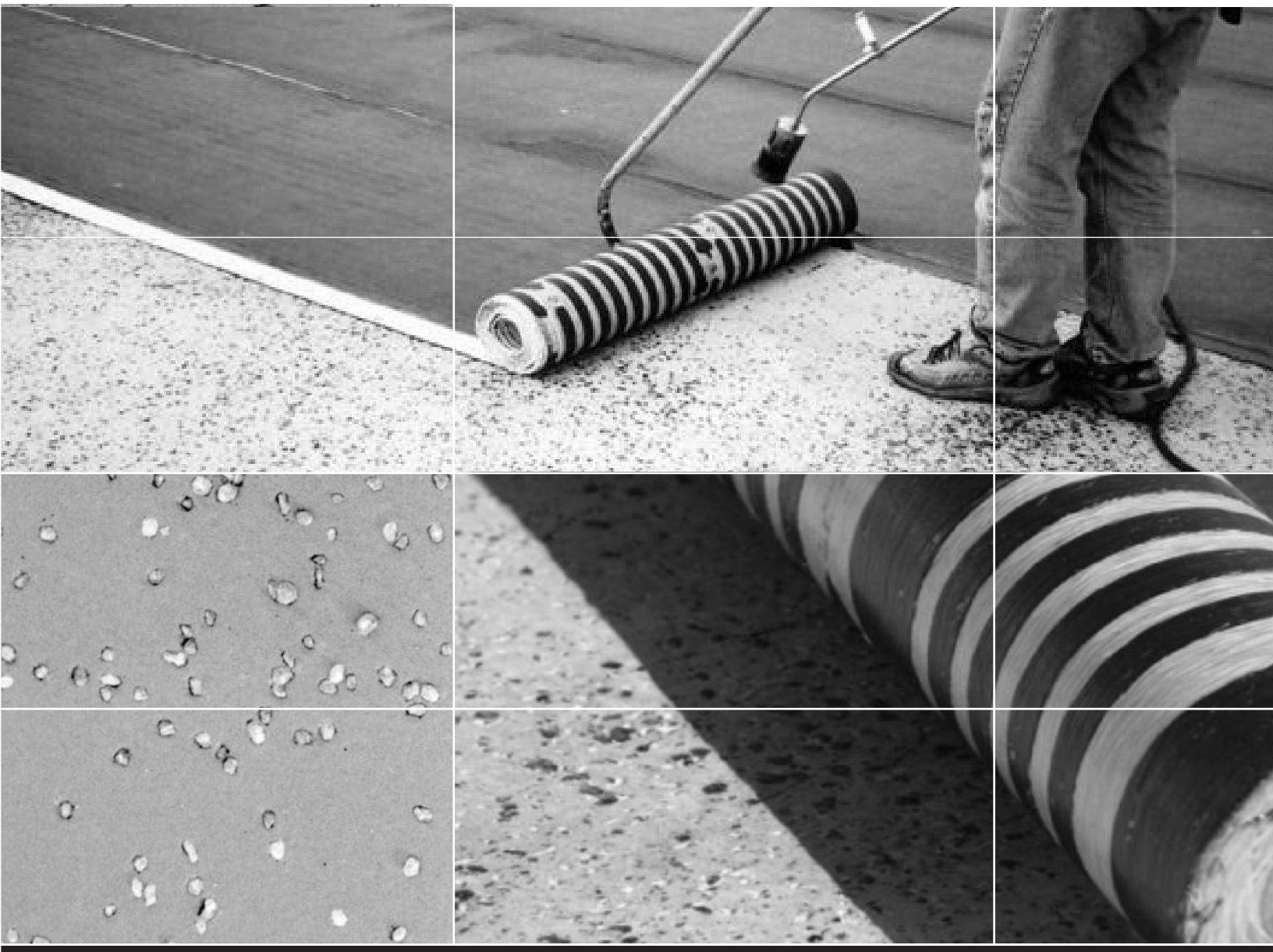
siplast®

## The RT System



# Installer's Guide

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# The Insulcel-RT Concept

Insulcel-RT is a unique system specially designed to allow direct adhesive attachment of a base ply to a lightweight insulating concrete surface while maintaining membrane venting. Insulcel-RT consists of: Insulcel Lightweight Insulating Concrete, RT Surface Treatment, and Paradiene 20 TS.

- **Insulcel Lightweight Insulating Concrete** mixes Insulcel-PB pregenerated cellular foam with a Portland cement/water slurry. Insulcel is placed at a minimum 2-inch thickness over the top of Insulperm Insulation Board.

- **RT Surface Treatment** is a heat-activated, asphalt-based pellet that is broadcast into the surface of newly poured Insulcel, and provides enhanced attachment characteristics when semi-adhered Paradiene 20 TS is applied directly to the surface of the Insulcel deck. The pellets create a mechanical lock into a properly heat-activated Insulcel-RT surface.

- **Paradiene 20 TS** is an SBS-modified bitumen base ply with a series of factory-applied, heat-activated, modified asphalt, grooved adhesive stripes running parallel with the sheet on its back side. Its design provides a mechanism for membrane venting while allowing direct adhesive attachment of the Insulcel surface.

When Paradiene 20 TS is torch-applied directly to a properly heat-activated Insulcel-RT surface, the membrane and pellets are heat welded, resulting in a highly engineered system with a first ply that is not only adhered to the surface, but also mechanically locked to the concrete without penetration of the membrane.

# Insulcel-RT Calibration and Mix Design

**Equipment: Deckmate**

**Components**

1. Mixer.
2. Hydraulic controls.
3. Water meter.
4. Transmission (gear shift).
5. Clutch.
6. Material dump gate.
7. Wet material hopper and pump.
8. Ground dry material hopper and auger.

**Calibration**

The water meter should be calibrated before beginning placement of lightweight insulating concrete. In order to accurately calculate yield, the quantity of water delivered must be accurate. Calibration can be checked by filling a container of known volume (such as a 55-gallon drum) and comparing the number of gallons required to fill the container to the meter reading. Be sure you know the actual volume of the container being used. Measure the height (h) and diameter (d) in inches and calculate the volume (in gallons) as follows:

$V= (pi)x(1/2\ d)^2(h)(7.49)/1728$, or
$V= (3.14)x(1/2\ d)x(1/2d)(h)(7.49)/1728$, or
$V= 0.0034(d)(d)(h)$

Alternatively, if a calibrated scale is available, the gallons delivered can be calculated as follows:

- Weigh an empty container.
- Fill the container with water and weigh it again.
- Subtract the container weight, then divide by 8.33 (which is the weight, in pounds, of a gallon of water) to determine the gallons delivered. Compare this figure against the meter reading.

Calibrate the water meter by resetting it to zero and filling a 55-gallon drum with water. Note the water meter reading. A meter reading of more than 5% +/- of the expected 55-gallons indicates that the meter should be repaired and recalibrated.

Check the speed of the paddles in the mixer. Count the paddle revolutions during the mixing process for one minute by marking one of the paddle sprockets with a spray paint dot. The paddles should complete between 42 and 45 revolutions per minute.

**Cement Bulker**

1. Power (as controlled from the Deck-Mate).
2. Cement is blown into the contractor's bulker.
   - This "fluffs" it up - making measuring by volume inaccurate.
   - It also creates a lot of dust.
3. Bulker vent – must have a filter bag over it to control the dust.
4. Load cell.

Cement must be weighed, not added by volume ("eyeballing" a mark in the hopper). The load cell calibration can be checked by placing bagged cement into the hopper. If bagged cement is not available, load cell calibration can be checked by putting an item of known comparable weight into the hopper. This method provides an approximation, but it will uncover gross inaccuracies. Volumizing cement will result in varying weight, depending on how long the cement has been in the bulker (freshly loaded cement has a lower bulk density due to the presence of entrained air).

If bag cement is used, it should be weighed carefully. Bag weight can vary substantially from the weight printed on the bag. Weight per bag can range from 85 - 95 pounds per bag.

**Equipment: Foam Generator**

**Components**

1. Compressed air supply.
2. Dilution tank.
3. Fluid pump.
4. Mixing block.
5. Air pressure controls.
6. Delivery nozzle.
7. Timer control box on the pump.

**Insulcel Foam**

When working with Insulcel, the most critical parameter is the foam density. The specification for foam density is 3.0+/-0.2 pcf. If the density of the foam is too high, the concrete will be fluid and runny. In this case, it will be very difficult to obtain a concrete density within the lower range of the specification. If the foam density is too low, the concrete will likely be "popcorny" or frothy and of low density. Foam flow rate is helpful for start-up, but the addition time can be fine-tuned by measuring concrete density without actual knowledge of the flow rate. If the specification density of the foam or concrete cannot be attained, contact Sipast Technical Services at 800-922-8800.

**Calibration**

The foam density must be calibrated prior to material placement. The following are procedures for determining foam flow rate and density.

**Foam Rate Determination**

This procedure provides the rate of foam production in gallons per minute (gpm) to enable the machine operator to determine the proper duration (minutes) of foam injection into the concrete mixer. It is recommended that foam rate be tested at least once per week (daily is preferred) and each time the machine is relocated.

Items needed:

1. Clean 55-gallon drum, top removed.
2. Stopwatch.

Procedure:

1. Set electric timer to 60 seconds and selector switch to automatic.
2. Hold the foam nozzle away from the empty drum.
3. Push the start button to begin foam generation.
4. When the nozzle produces uniform foam in a steady stream, fill the 55-gallon drum, taking precautions not to entrap large air voids. Time and record this operation with a stopwatch. Stop foam generation when the drum is full.
5. Do the calculation: gpm = V60/t
   Where gpm = nozzle output, gal/min
   V = volume of drum in gallons
   t = seconds to fill drum
   gal/min can be converted to cubic feet/sec as follows:
   $$\frac{\text{gpm}}{(7.49)\,(60)} = \text{cubic feet/sec}$$

### Foam Density Determination

Insulcel foam should weigh 2.8 to 3.2 pounds per cubic foot. A simple test method will permit the machine operator to calculate foam weight.

Items needed:

1. Clean 5-gallon plastic pail.
2. Scale: 50-pound capacity, readable to 0.1 pounds.
3. Supply of freshly generated foam.

Procedure:

1. Weigh the pail empty and also completely filled with water. Subtract the empty pail weight from its filled weight. The contents of pail will be:
   $$\frac{\text{Filled - empty wt. in lb}}{62.4} = \text{Volume in cu ft}$$
2. Empty the water from the pail. Fill the pail with freshly generated foam from a 55-gallon drum. Screed the foam flush with the top of the pail and remove any foam on the pail's exterior.
3. Weigh the filled pail. Foam density is:
   $$\frac{\text{Filled pail - empty wt in lb} = \text{lbs/ft}^3}{\text{Pail volume in cubic feet}}$$
   = Volume in cu ft

If foam density is outside the specified range, refer to the generator manual to correct. This normally involves adjustment of air and /or fluid pressure.

### Mix Design

Shown below are typical quantities used in a 1 cubic yard Strong DeckMate. Note that the batch yields are not all the same.

**INSULCEL RT- 42 PCF Minimum Wet Density**

| Typical Mix Designs for Insulcel RT | | | | |
|---|---|---|---|---|
| **Cubic Ft of Foam** | **Bags of Cement** | **lb of Cement** | **Gallons of Water** | **Batch Volume** |
| 18 Cubic Ft | 7 Bags | 650 lb | 40 Gallons * | 27 Cubic Ft |

* Water volumes are approximate and may be adjusted slightly to achieve ideal concrete consistency.

The foam volume shown above is approximate.

The quantity of foam must be adjusted so that the wet density of Insulcel falls within the range listed below:
John: Where is this?

### Batching

Check the mix design. It is easy to check whether the proper ratio of materials is being used by…. (John – need to tell them how to check) If the proper ratio is not being used, the situation is simple to correct. Observe the mixing process and note the pounds of cement, the volume of foam, and the amount of water added to the mixer. Batch sizes can vary. It is the ratio of materials that is important.

Typical sequencing of material addition - water, cement, and foam:

1. The cement hopper is charged with cement until the load cell reads the correct weight for the given mix design.
2. The mixer paddles are turned on to rotate in the mixing direction.
3. A valve is opened, allowing water to flow into the mixing drum until the water meter reads the correct volume in gallons.
4. The previously weighed cement is augered into the mixer.
5. As the cement level decreases in the hopper, foam is added.
6. The mixing paddles continue to turn until all foam is added.
7. The concrete is mixed for an additional 20-60 seconds after all materials enter the drum.
8. The cement hopper is charged again until the load cell reads the proper weight.
9. The gate is opened in the mixing drum, forcing all concrete into the pump hopper.
10. The mixing drum gate is closed, the water meter is reset to "zero," and the paddles are turned on to mix again.
11. The pump is turned on slowly, forcing the mixed concrete through a hose for final placement onto the roof deck.
12. The mixing process starts over while the pump is draining the materials out of the pump hopper.
13. When second batch is mixed, enough material has been pumped to empty the mixing drum into the hopper.
14. Reset the water meter again and begin mixing the third batch.

Insulcel RT Typical Mix Design Chart

| Water Cement Ratio | Cement (lbs) | Water (gals) | Foam Volume (cf) | Foam Density (pcf) | Batch Volume (cf) | Wet Density (pcf) | Dry Density (pcf) | Number of Batches to Make One Yard | Percent of Concentrate Gallon Used (%) | Pounds of Concentrate Used (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.55 | 630 | 41.5 | 18.4 | 3.0 | 27.2 | 38.0 | 30.0 | .099 | 16.1% | 1.54 |
| 0.55 | 670 | 44.2 | 17.8 | 3.0 | 27.1 | 40.3 | 32.0 | 1.00 | 15.6% | 1.49 |
| 0.55 | 710 | 46.8 | 17.1 | 3.0 | 27.0 | 42.7 | 34.0 | 1.00 | 14.9% | 1.43 |
| 0.55 | 755 | 49.8 | 16.6 | 3.0 | 27.1 | 45.0 | 36.0 | 1.00 | 14.5% | 1.39 |
| 0.55 | 795 | 52.4 | 16.0 | 3.0 | 27.1 | 47.3 | 38.0 | 1.00 | 14.0% | 1.34 |
| | | | | | | | | | | |
| 0.50 | 630 | 37.8 | 18.9 | 3.0 | 27.2 | 36.9 | 30.0 | .099 | 16.5% | 1.58 |
| 0.50 | 670 | 40.2 | 18.3 | 3.0 | 27.1 | 39.1 | 32.0 | 1.00 | 16.0% | 1.53 |
| 0.50 | 710 | 42.6 | 17.7 | 3.0 | 27.0 | 41.4 | 34.0 | 1.00 | 15.5% | 1.48 |
| 0.50 | 755 | 45.3 | 17.2 | 3.0 | 27.1 | 43.7 | 36.0 | 1.00 | 15.0% | 1.44 |
| 0.50 | 795 | 47.7 | 16.6 | 3.0 | 27.0 | 46.0 | 38.00 | 1.00 | 14.5% | 1.39 |
| | | | | | | | | | | |
| 0.45 | 630 | 34.0 | 19.4 | 3.0 | 27.2 | 35.8 | 30.0 | 0.99 | 17.0% | 1.62 |
| 0.45 | 670 | 36.2 | 18.8 | 3.0 | 27.1 | 38.0 | 32.1 | 1.00 | 16.4% | 1.57 |
| 0.45 | 710 | 38.3 | 18.3 | 3.0 | 27.0 | 40.1 | 34.0 | 1.00 | 16.0% | 1.53 |
| 0.45 | 755 | 40.7 | 17.8 | 3.0 | 27.1 | 42.4 | 36.0 | 1.00 | 15.6% | 1.49 |
| 0.45 | 795 | 42.9 | 17.3 | 3.0 | 27.1 | 44.5 | 38.0 | 1.00 | 15.1% | 1.45 |

The concept of yield for cellular concrete is less well-defined or universally agreed upon than for aggregate-based concretes. To some it means the amount of concentrate used per yard of concrete. To others, it is the amount of cement used per yard of concrete.

Bottom line – it is both. The contractor needs to know the quantity of each of the materials being used to pour concrete at the specified density.

Density Measurement

# Field Density Measurements

Always perform a wet density test. Whenever a problem is encountered in the field, this should be your first course of action. It is the only means of determining the basic characteristics of the placed concrete prior to deck completion. Densities should be taken at least once per hour, or when material appears inconsistent. A Siplast Insulation Pouring Audit Report book should be used to record this information.

### Wet Density Test

Typically, a 10-qt steel pail (1/3 cf) is used to perform a wet density test. However, any pail of similar size will work as long as it does not deform when filled with material and lifted.

Procedure:

1. Weigh the pail full of water.
2. Net weight/62.43 = volume in cubic feet
3. The factor to calculate density in pcf from the net bucket weight is 1/bucket volume.

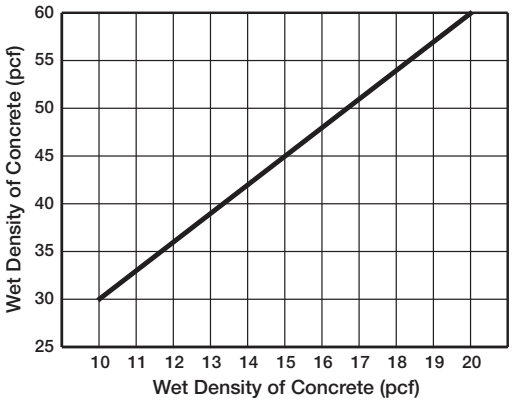
Calibration

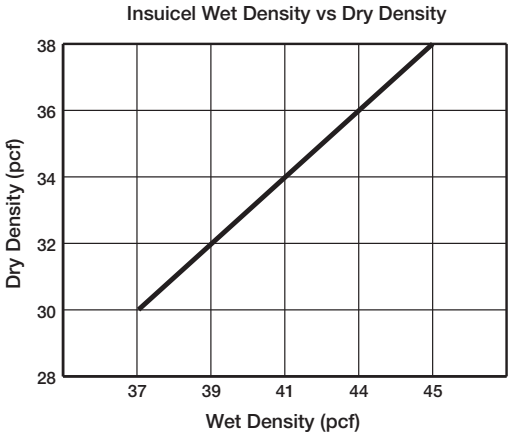
Example: 22 lb = net wt of bucket full of water
22/62.43 = 0.352 cubic feet
1/0.352 = 2.83 = factor to multiply net bucket weight to get the density in pcf.

Density

Example: 21 lb = net weight of bucket full of concrete
(21)(2.83) = 59.4 pcf wet density

Always calibrate the scale to be used with a known weight to ensure accuracy.




**Wet-Dry Density Relationships**

The point to remember is that the dry density and the final physical properties of the deck are a direct result of the wet density. If the wet density is not within specified range, the dry density will be out of spec and the physical properties of the deck (nail withdrawal, surface hardness, compressive strength, etc.) may not be acceptable. Climatic conditions and cement chemistry have a modifying influence, but the only controllable variable that the contractor has is the wet density.

## Insulcel-RT Pouring Sequence

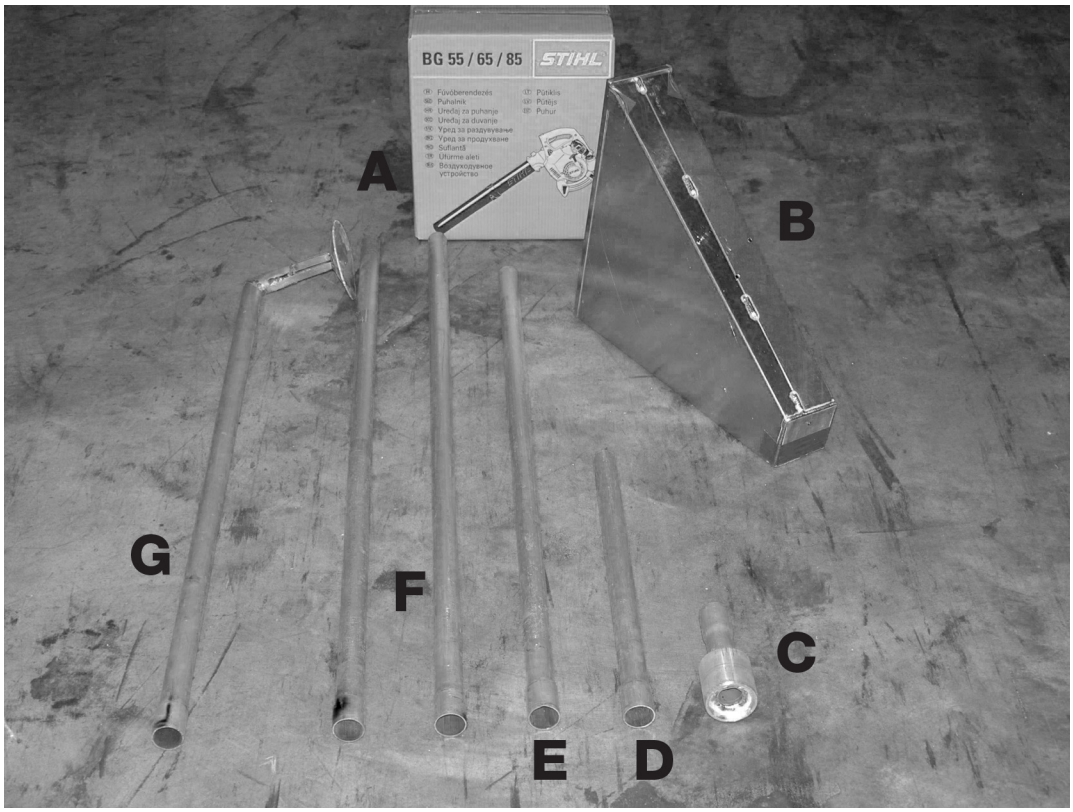
1. Pouring slurry coat.
   - Ensure proper thickness of the slurry coat. If the proper Insulcel slurry thickness has been applied, concrete will be visible in the holes of the Insulperm.
2. Placing Insulperm. (Place boards into the slurry within 30 minutes of the slurry pour.)
   - Do not scrape the lightweight insulating concrete from the substrate surface when placing Insulperm boards into the slurry.
   - Stagger joints (brick pattern).
   - Walk the boards into the slurry.
   - Establish stair-step configuration.
3. Pouring topcoat.
   - Maintain minimum thickness over Insulperm or substrate.
   - If floating to strings, check for “bird baths.”
4. Applying RT Pellets.
   - Using the RT Applicator (Figure 1), **apply RT Pellets to the surface while the Insulcel concrete is still green,** immediately after the finishing/screeding is complete. RT pellet application is performed in conjunction with the concrete finishing process.
   - Apply RT Pellets at a rate of 4 pounds per square. Coverage should be uniform and consistent across the surface. Figure 2 illustrates RT pellet distribution at a rate of 4 pounds per square. **Pellets should penetrate the Insulcel such that the pellet is nested in the concrete surface. Pellets should not sink entirely or be resting on the surface of the concrete**. Proper pellet penetration depth is illustrated in Figure 3. The optimum vertical drop distance for the pellets to achieve proper penetration of the Insulcel is no more than 12 inches from the surface of the fresh concrete.

- Weigh 4 pounds of RT Pellets and load them into the RT Applicator. Measure a 100-square foot area to be poured. (This can be measured using 12½ pieces of Insulperm.) Pour and finish the Insulcel over this area, and then evenly apply the RT Pellets until the RT Applicator is empty. Compare this area to the picture in figure 2 to check for proper distribution, and look at the pellets to check for proper pellet depth.
- Ensure that the surface of the Insulcel remains smooth and free from irregularities. When pouring concrete adjacent to the previous day's work, a sacrificial sheet of Parabase should be laid over the hardened concrete. This will prevent fresh concrete from contaminating the previously-applied RT Pellets.
- Allow the Insulcel-RT to cure for 48 to 72 hours. Perform a base ply fastener withdrawal test using Zono-tite Base Ply Fasteners. A minimum 40-pound withdrawal must be achieved before roof membrane application can begin.
- Inspect the deck for questionable areas. Areas that exhibit scaling, spalling, frothing, absence of pellets, or other serious irregularities should be repaired using methods noted in the diagnostic section of this guide (pages 15-17).
- **On the day of membrane application, thermally activate the RT Pellets before beginning roof membrane application.** This is done by heating the surface of the concrete using a torch wagon or hand torch. The pellets will become glossy black and begin to flow when heat is properly applied.
- **Clean the heat-activated surface of the Insulcel RT application by sweeping or blowing off dust, slake, and debris prior to application of the Paradiene 20 TS.** Failure to clean the surface may result in improper, or non-existent, bonding of the torch-applied membrane.
- Apply Paradiene 20 TS using a torch wagon or hand torch. Do not try to activate the pellets and torch Paradiene 20 TS simultaneously. The activation of the RT Pellets must always be performed prior to the torching of the Paradiene 20 TS membrane in a separate step. This sequencing is to ensure that any surface moisture is removed prior to application of the Paradiene 20 TS.

5. Installing venting.
   - **Siplast requires perimeter, curb, and topside venting of the RT System to ensure the release of any vapor pressure build-up.** The maximum distance between venting perimeters or roof vents is 60 feet.
   - Install roof vents daily. This will help with the venting of the roof system and reduce the potential for blisters in the Paradiene 20 TS sheet. Do not wait until the application of the approved cap sheet to install the vents.
6. Install an approved cap sheet per Siplast recommendations.
7. Additional notes.
   - Touch up finishing between runs or screed paths as soon as possible. Always pour to a vertical form at the end of the day. Cold joints should be square-edged.
   - When continuing work the following day, ensure that overspray and excess concrete that accumulate during the screeding process are not allowed to cover the previous day's work.
   - Repair areas of the concrete that are powdery, flaking, or torn due to late darby use before the application of the roofing membrane.

# RT Applicator and Hopper Unit

### RT Applicator




### Component List

**A.** 1 – Stihl BG 85 Blower

**B.** 1 – Hopper Unit
(with hopper unit components enclosed)

**C.** 1 – Blower Bushing

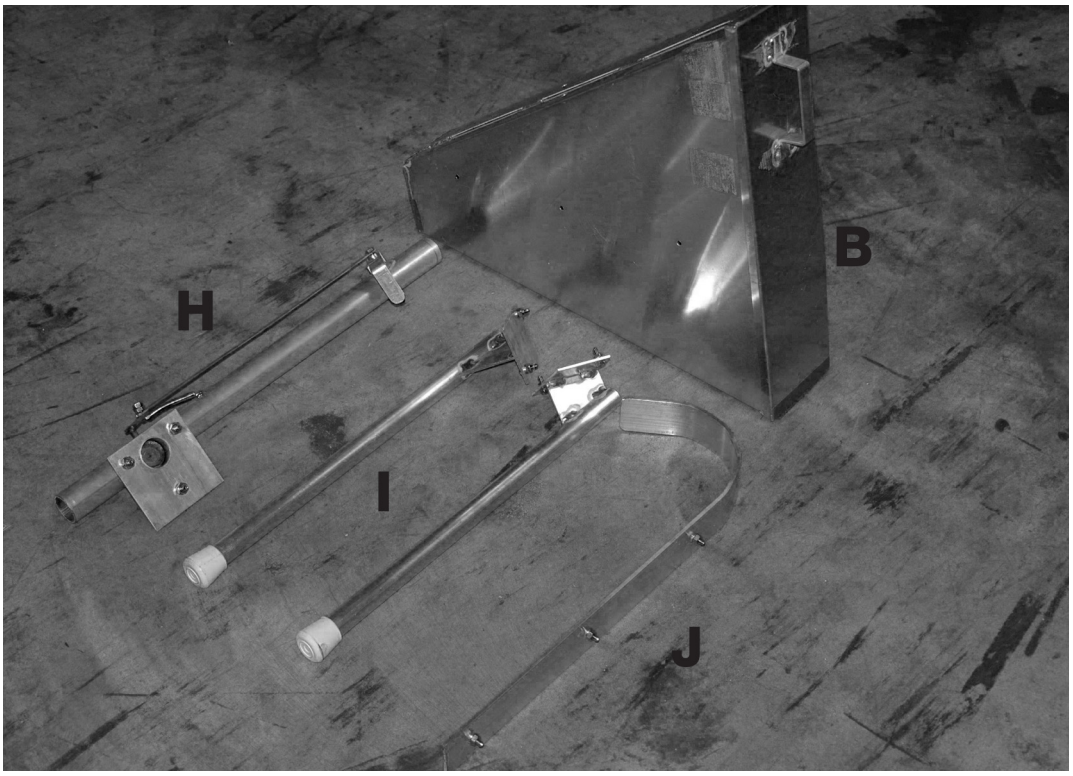
**D.** 1 – Belled Pipe (24 in.)

**E.** 1 – Belled Pipe (48 in.)

**F.** 2 – Belled Pipe (54 in.)

**G.** 1 – Belled Pipe with Distribution Cone

**RT Hopper Unit**




**RT Hopper Unit Components**

**B.** Hopper Unit

**H.** 1 – Throttle Pipe

**I.** 2 – Hopper Legs

**J.** 1 – Shoulder Clamp

# RT Pellet Application

1. The RT pellets must be applied to the surface while the Insulcel concrete is still green. The pellets should be applied after the normal placing and screeding process of the concrete application. RT pellet application is performed in conjunction with the concrete finishing process. Pellets should be applied immediately after the finishing is complete.
2. Once the Insulcel concrete is troweled and finished properly the pellets are applied using the RT Applicator. Pellets are applied at a rate of 4 pounds per square. Coverage should be uniform and consistent across the surface. Figure #2 shows RT pellet distribution. Pellets should penetrate the Insulcel such that the pellet is nested in the concrete surface (i.e., they should not sink entirely or be resting on the surface of the concrete). Optimum vertical drop distance for the pellets is no more than 12 inches from the surface of the fresh concrete. Proper pellet penetration depth is illustrated in Figure #1.

3. Start by weighing four pounds of RT pellets and loading in the RT applicator. Measure an area of the roof to be poured which equals 100 square feet. This can be achieved by counting twelve and one half pieces of Insulperm. Pour and finish the Insulcel topping over this area and then evenly apply the RT pellets until the RT applicator is empty. Compare this area to the picture in figure 2 and check for proper pellet depth.

4. Care should be taken to ensure that the surface of the Insulcel remains smooth and free from irregularities. When pouring concrete adjacent to the previous day's work, a sacrificial sheet of Parabase should be laid over the hardened concrete. This will prevent fresh concrete from contaminating the previously applied RT surface treatment.

5. The Insulcel-RT is allowed to cure for 48 to 72 hours. Base ply fastener withdrawal is performed using Zono-Tite Base Ply Fasteners. A minimum 40-pound withdrawal must be achieved before roof membrane application can begin. The deck is then inspected for questionable areas. Areas that exhibit scaling, spalling, frothing, absence of pellets, or other serious irregularities should be repaired using methods established in the diagnostic section (pages 15-17).

6. Before roof membrane application can begin, the RT pellets need to be thermally activated. This is achieved by heating the surface of the concrete using a torch wagon or hand torch. The pellets will become glossy black and begin to flow when heat is properly applied

7. The heat activated surface of the Insulcel RT must be swept or blown free of dust, slake, and debris prior to application of the Paradiene 20 TS. Failure to do so may result in improper, or non-existent, bonding of the torch applied membrane.

8. Paradiene 20 TS is applied using a torch wagon or hand torch. **Do not** try to activate the pellets and torch Paradiene 20 TS simultaneously. The activation of the RT pellets must always be performed prior to the torching of the Paradiene 20 TS membrane in a separate step. This sequencing is to ensure any surface moisture is removed prior to application of the Paradiene 20 TS. Activate the RT pellets the same day of membrane application.

9. Siplast requires venting of the RT system to ensure the release of any vapor pressure build-up. Perimeter, curb, and topside venting are required. The maximum distance between venting perimeters or roof vents is 60 feet.

10. Roof vents must be installed daily. This will help with the venting of the roof system and reduce potential blisters in the 20 TS sheet. Do not wait until the application of the approved cap sheet to install the vents.

11. An approved cap sheet is to be applied per Siplast recommendations.

**Figure 1. Penetration depth of RT pellets**

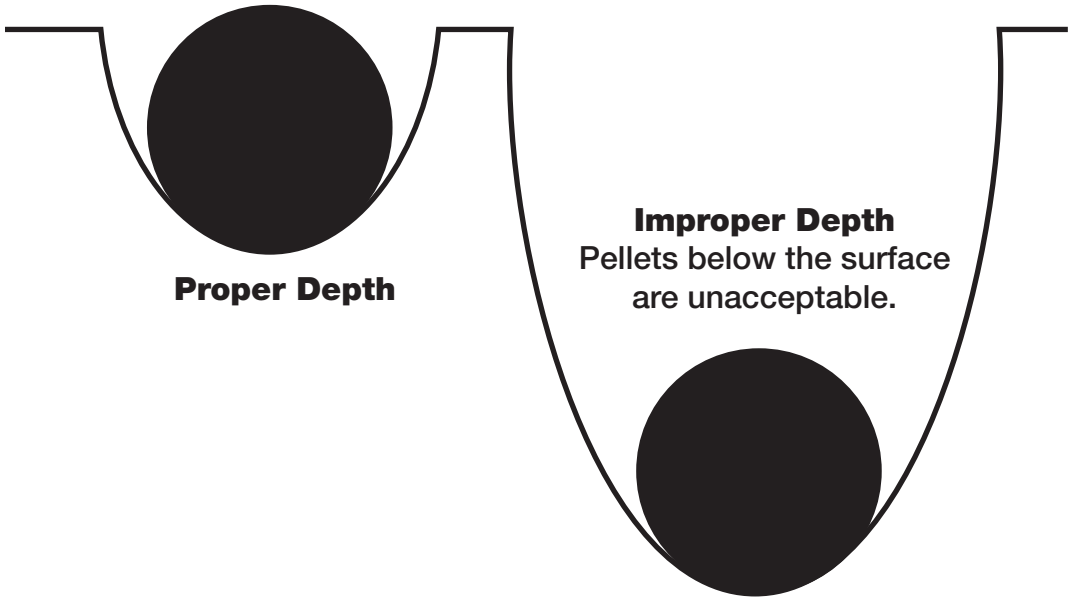
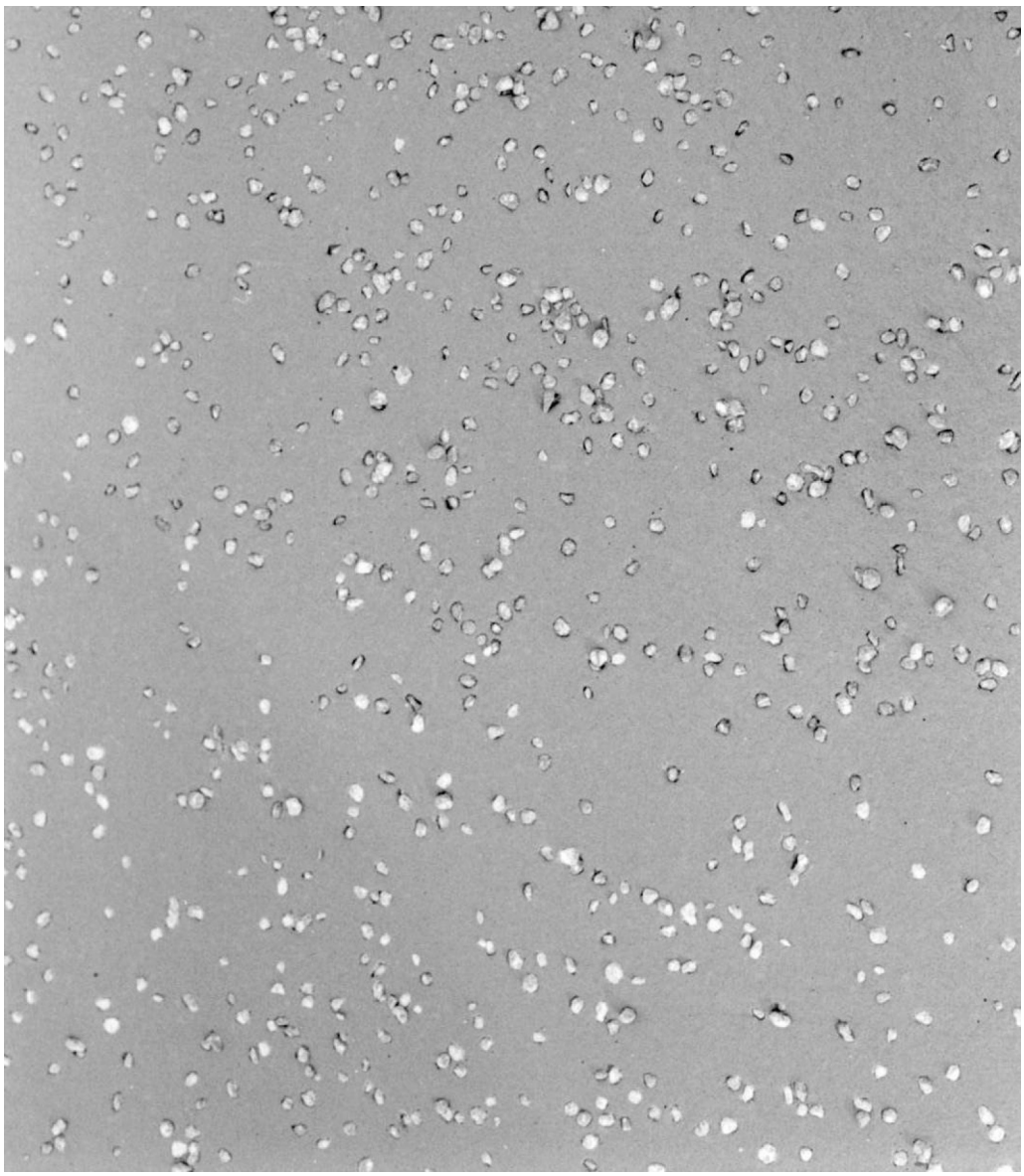



**Figure 2 - Typical RT pellet distribution at 4 pounds per square.**



# Enhanced Attachment of Perimeters and Corners

When wind uplift requirements dictate, additional uplift resistance at perimeter and corner areas can be achieved by the following application sequencing.

1. Nail Para-Lok fasteners at the same rate as 1-150 Zono-tite pattern extrapolated for the corners and perimeters. (Figure 3.)

2. The fasteners should be placed through the Paradiene 20 TS and then a subsequent layer of TG torched over the fasteners.

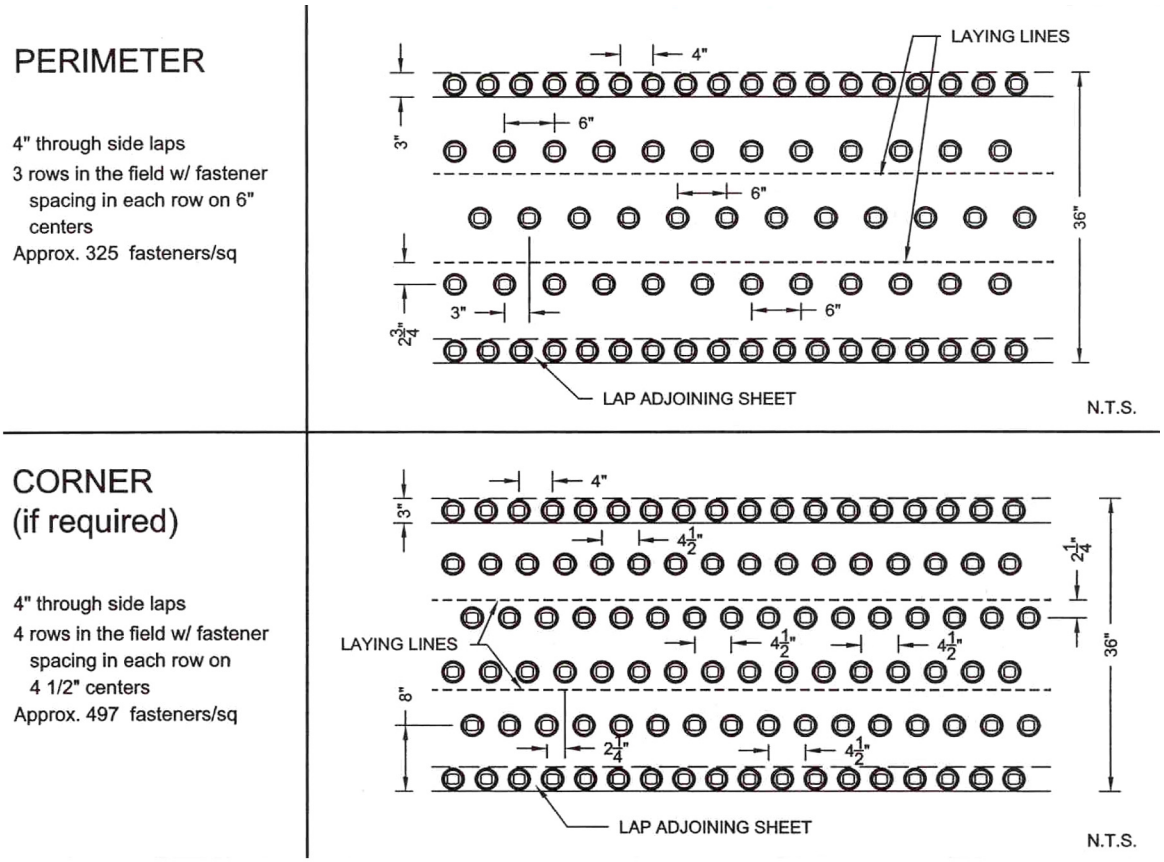



**Figure 3**

# Diagnostics – Troubleshooting

| | |
|---|---|
| **What if it rains on the Insulcel RT before it is fully set and minor to moderate pitting occurs?** | A minor to moderate rain-pitted surface is not detrimental to the attachment of Paradiene 20 TS. |
| **What if it rains on the Insulcel RT before it is fully set and substantial pitting occurs?** | The surface should be capped with an additional layer of Insulcel RT the following day or a mechanically fastened Parabase base sheet should be attached. |
| **What if rain washes the surface of the concrete?** | If the Insulcel thickness remains adequate, a mechanically fastened base sheet should be attached. If the topcoat thickness has diminished below the minimum requirement then the concrete should be removed or scraped fully and capped with another layer of Insulcel RT. |
| **What if the nail withdrawal values are too low?** | If a nail withdrawal is too low move twelve inches away and perform another. If several nail withdrawal tests yield low values then it is possible that the concrete is not sufficiently cured. If this is the case, return at a later date and retest. If the concrete still yields low values, then it will be necessary to remove the areas with insufficient values and repour. Refer to SLIC Bulletin #5 |
| **What if there are no pellets in the surface of the concrete?** | Isolated areas (15 $ft^2$ or less) are of no concern unless they exceed more than one bare area per square. These areas must either be capped with Insulcel-RT, or covered with a mechanically fastened base sheet. |
| **Can there be too many pellets?** | Proper coverage rate of pellets should be 4 lb per sq. When the pellets are melted there should still be a substantial amount of visible concrete. If a full coverage of pellets occurs (approximately 10 lb per sq), then a mechanically fastened base sheet must be applied. Small areas (15 $ft^2$ or less) are of no concern unless they exceed more than one excessively covered area per square.. |
| **What if the surface is chalky or dusty?** | The surface must be clean and free from materials that can act as a release agent for the Paradiene 20 TS. If a surface appears questionable, or the bond of the Paradiene 20 TS is in question, the surface must be primed with PA 1125 or PA 917 Asphalt Primer. |
| **What if the surface of the concrete is very irregular?** | This occurs most often at cold joints and transitions. If the surface appears as though the Paradiene 20 TS will not properly adhere, then the questionable area must receive a mechanically fastened base sheet, or it may be capped with Insulcel or Zono-Patch. Jagged surfaces can occur when Insulcel is finished after the initial gel stage. If it is necessary to walk in gelled concrete do not try to refinish it. Repair all inadequate surfaces when they are suitable for foot traffic. |

| | |
|---|---|
| **What happens if the lightweight nails bounce during the nail pull test?** | The topcoat thickness may be too thin and does not meet Siplast specifications. Core cuts should be taken and topcoat thickness measured. If inadequate, proper thickness must be attained. It may be necessary to cap the deck order to achieve proper thickness.<br><br>Insulperm boards that are not firmly attached to the slurry coat can also cause a fastener to bounce. This usually occurs in localized areas. These boards should be removed and replaced with a proper slurry coat to ensure proper bonding and wind uplift values. |
| **What happens when a deck freezes?** | If a deck freezes hard during the first 24 hours after application, it is possible that a thin layer (1/16"-1/8") of concrete will spall, or scale off of the surface. This scaling can be swept off and the deck roofed using a mechanically fastened base sheet, only if the proper amount of concrete thickness remains after cleaning. If nails bounce due to the loss of thickness, then it is necessary to cap the concrete with a another layer of Insulcel RT.<br><br>If a contractor anticipates cool weather at the time of the pour, they should follow the guidelines contained in SLIC Bulletin #12 |
| **What if a deck cracks?** | Cracks are typically the result of forces created by shrinkage during the curing and drying process. Small cracks generally do not pose a problem to the performance of the deck.<br><br>Cellular concretes are more susceptible to cracking. Refer to SLIC Bulletin #7. |
| **What if the surface of the deck is rough?** | Lightweight insulating concrete is easily manipulated even after it has set up. If isolated ridges, fins, or protrusions are present on the surface of the deck, simply level the surface by scraping it until it is smooth.<br><br>If substantial depressions, holes, pits, etc. are present, then Zono-Patch must be used to level the surface. |
| **When should the Insulcel RT System deck be roofed?** | After 48-72 hours, or when the surface will bear foot traffic without damage and yields a minimum 40 lb base ply withdrawal resistance. Refer to SLIC Bulletin #13. |
| **Are topside roof vents required?** | Yes. The RT system requires the placement of roof vents in the Paradiene 20 TS sheet. Spacing and sequencing of roof vent application can be found in SLIC Bulletin #10. |

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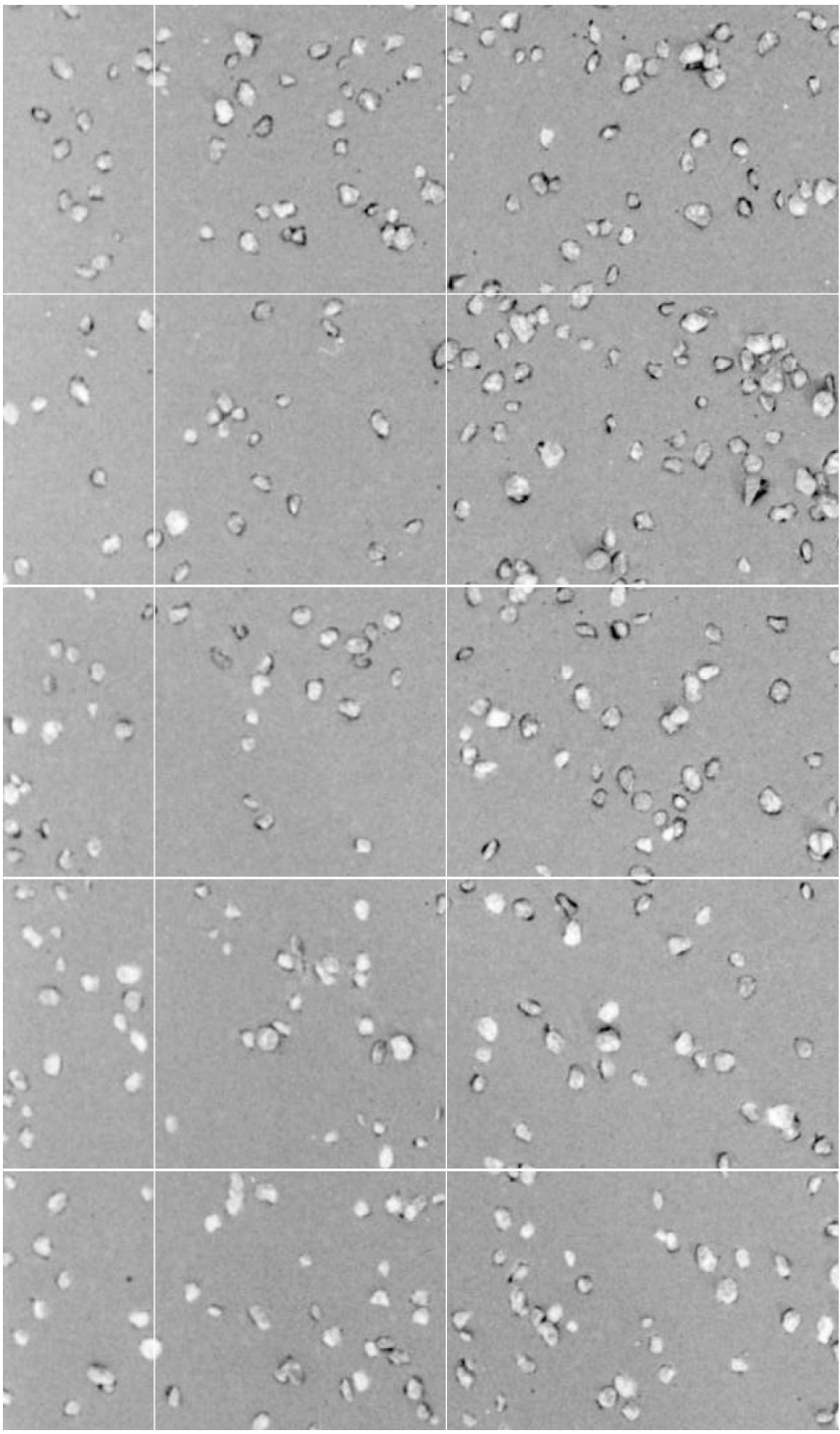

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