

TEMP-COAT® Brand Products, LLC

“Engineering Tomorrows Environment”

TEMP-COAT® Brand Products Installation Guide

Member of
American Society Naval Engineers



U.S. Coast Guard Approved

U.S. Department
Of Transportation

United States
Coast Guard



Energy Star Approved



Approved



Thank you for your interest in TEMP-COAT Brand Products
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TEMP-COAT® IS AN **INNOVATIVE** PRODUCT BY MOST STANDARDS. SHOULD YOU HAVE ANY QUESTIONS ABOUT THE PREPARATION, APPLICATION, USE OR INSTALLATION, PLEASE CONTACT YOUR DISTRIBUTOR OR TEMP-COAT® BRAND PRODUCTS, LLC.

TEMP-COAT® **IS NOT** A PAINT

TEMP-COAT® SHOULD BE TREATED AS AN **INSULATION**

- DO NOT OVER MIX TEMP-COAT®
- STRAIN TEMP-COAT® TO PREVENT GUN CLOGGING AND TO PROMOTE EVEN PRODUCT FLOW
- SPRAY TEMP-COAT® AT THE LOWEST POSSIBLE PRESSURE

IMPORTANT: OVER MIXING OR USE OF EXCESSIVE PRESSURE CAN CRUSH THE CERAMIC MICRO-SPHERES CONTAINED IN TEMP-COAT® REDUCING THE PRODUCTS INSULATION PROPERTIES.

TEMP-COAT® **IS NOT** A PAINT

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Legend

* will disbond at temperatures over 350 ° F.

** temperatures greater than 350° F require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction.

◆◆ If you are uncertain as to what is meant by Flash, Completely or Thoroughly dry or have not gone through application and product training. Contact the manufacturer or your local distributor for assistance.

Thank you for your interest in TEMP-COAT® Brand Products. For a complete copy of the "Industrial Installation Guide" call 1-800-950-9958 or E-Mail your request to INFO@TEMPCOAT.COM

TEMP-COAT® & TEMP-COAT® Roofing & Siding

- Pipe application chart - Sq.Ft. = Pipe Dia. X Pi X 100 ft long (Fraction of gallons rounded up to next full gallon)

Pipe O.D.	Sq.ft.	Gals. Per 15 Mil	Gals. Per 20 mil	Gals. Per 40 mil	Gals. per 60 mil	Gals. Per 80 Mil	Gals. per 100 Mil	Gals. per 120 Mil	Gals. per 140 Mil	Gals. per 160 Mil
2"	52.36	1	2	3	4	5	7	7	8	10
4"	104.72	2	3	6	7	9	13	14	17	19
6"	157.08	3	4	8	11	13	19	21	25	29
8"	209.44	4	6	11	14	18	25	28	33	39
10"	261.80	5	7	13	18	22	31	35	41	48
**12"	314.16	6	8	16	21	27	37	42	49	58
14"	366.52	7	10	19	25	31	44	49	57	67
16"	418.88	7	11	21	28	35	50	56	65	77
18"	471.24	8	12	24	32	40	56	63	73	86

Figure 1

- Flat surface application chart (Fraction of gallons rounded up to next full gallon)

Flat Surface Sq.Ft.	Gals. Per 15 Mil	Gals. Per 20 Mil	Gals. Per 30 Mil	Gals. Per 40 Mil	Gals. Per 60 Mil	Gals. Per 80 Mil	Gals. Per 100 Mil
100	2	3	4	5	7	9	12
1,000	20	25	34	50	67	85	118
4,000	67	100	134	200	264	334	471
8,000	134	200	265	400	528	667	941
10,000	167	250	333	500	667	833	1,176
20,000	334	500	666	1,000	1,334	1,666	2,352
30,000	501	750	999	1,500	2,001	2,499	3,528
50,000	835	1,250	1,665	2,500	3,335	4,165	5,880
100,000	1,670	2,500	3,330	5,000	6,670	8,330	11,760

Figure 2

- Roof application chart with 20% added for corrugation (Fraction of gallons rounded up to next full gallon)

Roof Surface Sq.Ft.	Gals. Per 15 Mil	Gals. Per 20 Mil	Gals. Per 30 Mil	Gals. Per 40 Mil	Gals. Per 60 Mil	Gals. Per 80 Mil	Gals. Per 100 Mil
100	3	4	5	6	9	11	15
1,000	24	30	41	60	81	102	142
4,000	81	120	161	240	317	401	566
8,000	161	240	318	480	634	801	1,130
10,000	201	300	400	600	801	1,000	1,412
20,000	401	600	800	1,200	1,601	2,000	2,823
30,000	602	900	1,199	1,800	2,402	2,999	4,234
50,000	1,002	1,500	1,998	3,000	4,002	4,998	7,056
100,000	2,004	3,000	3,996	6,000	8,004	9,996	14,112

Figure 3

- See reverse side for added information & instructions. ** See reverse side for added information & instructions.

Desired Mil Thickness	Sq.Ft. per Gallon Divided by Factor	Sq.Ft. per Gallon
300 (300/1000)	60 ÷ 20 =	3.0
250 (250/1000)	60 ÷ 16.7 =	3.6
240 (240/1000)	60 ÷ 16.0 =	3.75
200 (200/1000)	60 ÷ 14.0 =	4.25
180 (180/1000)	60 ÷ 12.0 =	5.0
160 (160/1000)	60 ÷ 11.0 =	5.5
140 (140/1000)	60 ÷ 9.0 =	6.5
120 (120/1000)	60 ÷ 8.0 =	7.5
100 (100/1000)	60 ÷ 7.0 =	8.5
80 (80/1000)	60 ÷ 5.0 =	12.0
60 (60/1000)	60 ÷ 4.0 =	15.0
40 (40/1000)	60 ÷ 3.0 =	20.0
30 (30/1000)	60 ÷ 2.0 =	30.0
20 (20/1000)	60 ÷ 1.5 =	40.0
15 (15/1000)	60 ÷ 1.0 =	60.0

Figure 4

Per square foot dry weight of TEMP-COAT® in 10 mil (10/1000 inch) thick increments

10 mils	12.7 grams		60mils	54.432 grams	1.92 ounces
20	25.5		70	63.504	2.24
30	38.2		80	72.576	2.56
40	51.0	1.8 ounces	90	81.648	2.88
50	70.9	2.5	100	90.72	3.2

Figure 5

Pipe Applications

- Pipes are insulated for a number of reasons. The chart is designed to help compute volume requirements once the desired thickness is established. Page 3 of this section gives estimated thickness for various temperatures. Thickness requirements may increase if outside ambient reaches extremes on outside installations.
- ****** On pipes larger than 12 inches in diameter and carrying temperatures greater than 350° F may require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction.
- Pipes can be coated very quickly when working with a hot surface. Drying times are negligible and multiple coats can be applied rapidly. * Follow instructions carefully to assure proper bond and to receive the maximum performance from the product.
- Pipes 3 inches in diameter and under may be better coated using a brush, small roller or air assisted Quik-Gun.

All Application Considerations

- When spraying overhead allow 15% (+/-) for fallout. Wind will effect volume requirements.
- Corrugation will effect volume requirements.
- Loading an airless spray unit with 100 feet of 3/8" hose requires approximately 1 gallon of product.

TEMP-COAT® & TEMP-COAT® Roofing & Siding

Mil Thickness Chart to Figure a Job

Desired Mil Thickness	Sq.Ft. per Gallon Divided by Factor	Sq.Ft. per Gallon
300 (300/1000)	60 ÷ 20 =	3.0
250 (250/1000)	60 ÷ 16.7 =	3.6
240 (240/1000)	60 ÷ 16.0 =	3.75
200 (200/1000)	60 ÷ 14.0 =	4.25
180 (180/1000)	60 ÷ 12.0 =	5.0
160 (160/1000)	60 ÷ 11.0 =	5.5
140 (140/1000)	60 ÷ 9.0 =	6.5
120 (120/1000)	60 ÷ 8.0 =	7.5
100 (100/1000)	60 ÷ 7.0 =	8.5
80 (80/1000)	60 ÷ 5.0 =	12.0
60 (60/1000)	60 ÷ 4.0 =	15.0
40 (40/1000)	60 ÷ 3.0 =	20.0
30 (30/1000)		30.0
20 (20/1000)	60 ÷ 2.0 =	40.0
15 (15/1000)	60 ÷ 1.5 =	60.0
	60 ÷ 1.0 =	

TO DETERMINE NUMBER OF GALLONS REQUIRED DIVIDE TOTAL SQUARE FOOTAGE BY SQUARE FEET PER GALLON.
WHEN FIGURING A JOB THINGS TO CONSIDER ARE: SUBSTRATE TO BE COATED, WORK AREA AND ACCESSIBILITY,

IMPORTANT INSTRUCTIONS AND RECOMMENDATIONS - BUYER SHOULD READ AND UNDERSTAND BEFORE STARTING

- 1) Keep Extra Tips on hand - Reversible .017 for vertical work & .021 for horizontal work.
- 2) Remove ALL screens & filters. TEMP-COAT® is light & viscous and will clog filters.

Note: extremely dry weather or excessive heat may create the need to add water. Per 5 gallon pail Never add over 10oz for vertical work & 20oz for horizontal work. In extremely hot or dry climates it may be necessary to mist the surface to be coated to reduce the temperature before spraying.

- 3) To mix use standard plaster paddle on 1/2" drill motor. Use finger to create trough where product meets pail wall. Pour 1 to 2 ounces of water in trough and let pail sit allowing water to seep breaking friction. Begin to mix from bottom to top allowing liquid to form. Complete mixing to a smooth consistency, total mixing time not to exceed 2 minutes.
- 4) DO NOT drag mixing paddle along the pail bottom or sides. Plastic that chips off will severely clog the spray equipment.
- 5) DO NOT OVER MIX - over mixing grinds the ceramic beads away and reduces effectiveness.
- 6) Strain all product through window screen size strainer. This will significantly reduce spray problems.

REMINDER - Be sure the oil lubrication pump cup contains oil.

- 7) Prime spray unit with water using a very clean container.
- 8) Set pressure at 40 psi. Increase pressure until pump stops when trigger of spray gun is released.
- 9) Keep clean water, in clean containers, in work area of pump & spray to clean out clogs and clean gun tips.

Note: continued pumping will compact product in the pump, gun & hoses requiring a time consuming take down and clean out procedure. If compacting occurs shut the system down, relieve pressure, remove the gun and allow product to ooze out. If product does not ooze out, you may need to use a 3 to 4 foot wire to break the clog so flow can begin. Removing the gun with pressure intact can cause injury and over spray. The recycled TEMP-COAT® is still good to use.

- 10) Check tips frequently for product build up which reduces fan size and causes dripping. . With proper tip, approved equipment and proper working conditions, achieving a single coat application of 30 mils or more is feasible on other than hot surfaces.
- 11) NEVER walk away from equipment with pressure on the system or equipment running.
 - a) Relieve all pressure from system and gun.
 - b) Place spray equipment, hose & gun in cool area or cover equipment with light colored tarp or blanket.
 - c) Place spray gun in bucket of water to keep it cool and stop product from drying out.
 - d) Remove pickup hose place in bucket of water & place lid tightly on bucket.
 - e) Upon return, try to pick up without using water, in most instances pump will respond.

NOTE: When spraying at mile high points or above 6,000 feet. Product should be stirred while spraying to assure proper mix and constant thermal protection.

- 12) After spraying, clean spray unit, spray gun and hose with clean water.
- 13) Use "Liquid Shield, diesel fuel or equal" pump lubricant protectorate.
- 14) Clean gun. Remove caked product/ceramics. Clean lubricate and replace parts after spraying.
- 15) Flush system, hose and gun thoroughly with clean water before reusing.

HIGH HEAT APPLICATIONS

1) TEST PATCH - Always do a test patch (if possible) on the surface to be coated. Begin with a mist or very thin coat. Using a probe type thermometer, cover the probe with tape to determine the performance achieved. Be cautious of heat bleed by that will distort the thermometer readings.

2) PRIMERS AND COATINGS - Primers and coatings that stick to hot surfaces are very limited in their performance level and ability to bond. In most cases, when a test hole is cut, we find that TEMP-COAT® sticks to the primer but the primer did not. Bonding has no effect on TEMP-COAT®'s ability to insulate. If the surface to be coated is large or flat and vibrates, alternative methods should be considered to hold TEMP-COAT® in place as with any other insulation.

3) INSTALLATION AND EFFECTS - TEMP-COAT® will turn colors and/or char at temperatures above 350° F * ** (see page 3) (Max. Temperature 400° F). If enough product is not installed to cover the temperatures or the possibility of that temperature, the powered or charred inner surface of the product will crack and separate from the surface. When enough is applied, the outer layer will remain intact holding the product on the surface as a good sound insulation. When applying layers of TEMP-COAT® be certain that the base coat(s) is only a mist. Each successive layer should be no more than a 20 (+/-) mil thickness and ample drying time should be allowed between coats. If the coats do not dry, moisture trapped between the layers will cause blistering and reduce the insulating capacity. Cracking to relieve the pressure, gases and moisture may occur.

4) EXPANSION AND CONTRACTION - Surfaces expand and contract. The larger the surface the more the opportunity for cracking and separation. Again, a suitable amount of product will allow the inner layer of product to char, and the outer layer to stay soft, expanding and contracting. If the surface being coated is expected to run intermittently causing constant expansion and contraction or if vibration is present a wrap of cheese cloth or a fiberglass mesh might be considered to prevent cracking of the product. Distributor-installers have performed successful installations using fiberglass strand matting sliced into 1 inch strips and shredding the particles into TEMP-COAT® then applying with brush or roller. When using cheese cloth or fiberglass mesh, the mesh should be embedded in the last layers of TEMP-COAT®.

In theory we recommend a 15 (+/-) mil (15/1000 of an inch) coating for every 20 degrees Fahrenheit you wish to change the temperature. We say "in theory" because TEMP-COAT® has a multiplying affect which can reduce the need for maximum amount of insulation therefore under favorable conditions less insulation can be used. We always recommend a test patch to determine the actual need for TEMP-COAT®. If you are not going to do a test patch then the greater amount is recommended.

Degrees in Fahrenheit	Degrees in Centigrade	Thickness in Mils (1/1000s of an inch)	Thickness in 64ths of an inch	Thickness in Millimeters
500* **	260	250 - 280	280 = 18/64	280 = 7.0 mm
450* **	232	210 - 250	250 = 16/64	250 = 6.0 mm
400* **	204	160 - 210	210 = 13/64	210 = 5.0 mm
350*	177	130 - 160	160 = 10/64	160 = 4.0 mm
300	149	110 - 130	130 = 8/64	130 = 3.0 mm
250	121	80 - 110	110 = 7/64	110 = 2.5 mm
200	93	50 - 80	80 = 5/64	80 = 2.0 mm
32	0	15 - 20	20 = 1/64	20 = 0.5 mm
0	-18	20 - 40	40 = 3/64	40 = 1.0 mm
-30	-34	40 - 50	50 = 4/64	50 = 1.2 mm
-45	-40	50 - 60	60 = 5/64	60 = 1.5 mm

* will disbond at temperatures over 350 ° F.

** temperatures greater than 350° F require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction.

Note: for large cylindrical items that exceed 350° F check the rate of expansion at high temperatures to be certain TEMP-COAT® provides sufficient elongation to remain in tact.

THANK YOU FOR CHOOSING TEMP-COAT® BRAND LIQUID
CERAMIC INSULATION

IMPORTANT THINGS YOU SHOULD KNOW BEFORE
MIXING AND APPLYING TEMP-COAT®.

WHEN YOU OPEN A BUCKET, THE PRODUCT WILL APPEAR THICK AND CHALKY. THIS IS BECAUSE THE HOLLOW CERAMIC BEADS HAVE RISEN TO THE TOP AND THE LIQUID IS AT THE BOTTOM. USING A STANDARD WALL TEXTURE MUD PADDLE CONNECTED TO A ½ INCH LOW SPEED DRILL MOTOR, RUN THE PADDLE TO THE BOTTOM OF THE BUCKET. HOLDING THE BUCKET BETWEEN YOUR FEET, SLOWLY BREAK UP THE PRODUCT BY PULLING THE PADDLE UP SLOWLY, MAKING A HOLE IN THE BOTTOM SO THAT THE PADDLE CAN TURN. SLOWLY BEGIN TO MIX THE PRODUCT. WHEN IT BECOMES FLUID, RUN A STICK AROUND THE EDGE OF THE BUCKET TO BREAK TO PRODUCT LOOSE FROM THE BUCKET WALLS. CONTINUE TO MIX UNTIL A CREAMY CONSISTENCY IS ACHIEVED. IT IS NOT NECESSARY TO GET ALL OF THE LUMPS OUT OF THE MIXTURE, AS YOU WILL BE STRAINING THE PRODUCT BEFORE SPRAYING IT.

IN EXTREMELY WARM AND DRY CLIMATES IT MAY BE NECESSARY TO ADD A SMALL AMOUNT OF WATER TO THE PRODUCT. DO NOT ADD MORE THAN 10 OZ. OF WATER TO THE FIVE-GALLON BUCKET OF PRODUCT.

AT HIGH ALTITUDES, IT IS VERY IMPORTANT TO STIR THE PRODUCT CONSTANTLY AS THE BEADS WILL TRY TO RISE TO THE TOP OF THE BUCKET. SOME SPRAY WILL HAVE NO INSULATION AND SOME SPRAY WILL HAVE NO BINDER. PLEASE KEEP THE PRODUCT MIXED.

STRAIN TEMP-COAT® THROUGH A SCREEN. COMMON WINDOW SCREEN WILL WORK WELL. CUT THE TOP HALF OUT OF A FIVE GALLON BUCKET AND TIE THE SCREEN LOOSELY OVER THE TOP CREATING A FUNNEL. WORK THE PRODUCT THROUGH THE FUNNEL WITH A PAINT BRUSH OR ROLLER.

APPLY TEMP-COAT® USING AN AIRLESS SPRAYER SUCH AS A GRACO BULLDOG OR AN ARO 800. A MINIMUM SIZE SPRAYER IS A 28 TO 1 RATIO UNIT. USE A GRACO SPRAY GUN WITH A REVERSIBLE TIP FOR EASY CLEANING. USE A 21/1000 TIP ON CEILINGS, ROOFS AND FLOORS. USE A 17/1000 TIP ON WALLS.

SPRAY AT THE LOWEST POSSIBLE PRESSURE SO THAT THE BEADS DO NOT CRUSH AND RUIN THE INSULATION. START TRYING TO SPRAY AT 40 TO 50 PSI. TURN PRESSURE UP UNTIL MACHINE SPRAYS CONSTANTLY. IF MACHINE PUMPS MORE THAN ONCE AFTER YOU RELEASE THE GUN TRIGGER, YOU ARE APPLYING TOO MUCH PRESSURE AND CAN DAMAGE THE BEADS.

IF YOU ARE APPLYING TEMP-COAT® IN A HOT ENVIRONMENT OR ON A WARM ROOF SURFACE, ALWAYS DROP YOUR SPRAY GUN IN A BUCKET OF WATER AND LET THE PRESSURE OFF OF THE GUN IF YOU STOP SPRAYING. IT IS NOT A BAD IDEA TO COVER EVERYTHING WITH A CLOTH OR CANVAS TO KEEP THE HEAT OFF OF THE EQUIPMENT.

ALWAYS KEEP THE TIP OF YOUR GUN CLEAN BY WASHING IT ON OCCASION IN A BUCKET OF WATER AND KEEP THE CONTAINER YOU ARE DRAWING TEMP-COAT® FROM COVERED.

TEMP-COAT® IS ONLY 1/5th LIQUID BY VOLUME AND IT WILL DRY OUT RAPIDLY IF NOT PROTECTED FROM THE HEAT AND SUN.

TEMP-COAT® MAY BE APPLIED BY HAND WITH A ROLLER AND BRUSH BUT SPECIAL INSTRUCTIONS ARE NEEDED FOR EASE OF APPLICATION AND FOR A GOOD FINISH. ALWAYS WET THE ROLLER SLIGHTLY BEFORE YOU START, AS TEMP-COAT® IS A VERY DRY PRODUCT.

BE CERTAIN THAT TEMP-COAT® IS DRY TO THE TOUCH BETWEEN EACH COAT. ♦♦(see pg 3)

WHEN APPLYING TEMP-COAT® ON HOT PIPES AND SURFACES, THE FIRST COAT MUST BE EXTREMELY THIN. YOU MUST BE ABLE TO SEE THROUGH IT. THIS IS VERY IMPORTANT AS IT WILL ALLOW ALL OTHER COATS TO ADHERE PROPERLY. THE SECOND COAT CAN BE A LITTLE THICKER. IF TEMP-COAT® BEGINS TO BLISTER, IT IS TOO THICK AND THE GASSES CANNOT ESCAPE THROUGH THE MICRO-POROUS SURFACES. ALL ADDITIONAL COATS CAN BE FROM 15 MILS TO 30 MILS IN THICKNESS MAKING CERTAIN THAT TEMP-COAT® IS DRY BETWEEN COATS.

PLEASE REVIEW THE TEMP-COAT® LABEL. THE LABEL GIVES INSTALLATION INSTRUCTIONS AND THE RECOMMENDED THICKNESS FOR VARIOUS HOT AND COLD APPLICATIONS.

A MIL IS 1/1000 OF AN INCH. EXAMPLE: 15 MILS IS EQUAL TO THE THICKNESS OF 7 SHEETS OF WRITING PAPER. A MIL IS NOT A METER.

CLEAN UP IMMEDIATELY UPON COMPLETION OF APPLICATION. TEMP-COAT® IS VERY DRY AND WILL SET UP QUICKLY IN HOSES, SPRAY EQUIPMENT, ROLLERS AND BRUSHES.

ALWAYS LUBRICATE SPRAY EQUIPMENT IMMEDIATELY. MOISTURE BUILD-UP IN HEADS OF SPRAY EQUIPMENT AND IN THE FLOW LINES FOR TEMP-COAT® WILL CORRODE AND RUST RATHER QUICKLY RUINING YOUR EQUIPMENT.

TEMP-COAT® IS A CERAMIC PRODUCT. THE HOLLOW GLASS BEADS WILL WEAR OUT SPRAY TIPS AT A RATE OF ONE TIP FOR EVERY 8000 TO 10,000 SQUARE FEET SPRAYED. IF THE TIP BEGINS SPRAYING THICK PRODUCT AT THE EDGE OF THE SPRAY PATTERN, IT WILL BE HARD TO GIVE THE SURFACE AN EVEN COAT OF PRODUCT.

WHEN SPRAYING A SURFACE, TEMP-COAT® COVERAGE IS 60 SQUARE FEET PER GALLON AT A THICKNESS OF 15 MILS. MARK OFF AN AREA 6 FEET BY 10 FEET (60 SF) AND SPRAY IT, YOU SHOULD HAVE USED ABOUT ONE GALLON OF PRODUCT.

PLEASE CONSULT OUR INSTALLATION GUIDE FOR MORE AND SPECIFIC INSTALLATION INSTRUCTIONS FOR ALL TYPES OF SURFACES.

OUR ORDER AND HELP LINE IS 1-800-950-9958, E-mail INFO@TEMPCOAT.COM . PLEASE FEEL FREE TO CONTACT US FOR TECHNICAL ASSISTANCE IN ENGLISH AT THIS NUMBER

IMPORTANT INSTRUCTIONS

- OPEN CONTAINER - THE TOP 80% IS A CRUST WHICH MUST BE BLENDED SLOWLY WITH THE FLUID AT THE BOTTOM.
- TO MIX USE STANDARD PLASTER PADDLE ON 1/2" DRILL MOTOR. USE FINGER TO CREATE TROUGH WHERE PRODUCT MEETS PAIL WALL. POUR 1 TO 2 OUNCES OF WATER IN TROUGH AND LET PAIL SIT ALLOWING WATER TO SEEP BREAKING FRICTION. BEGIN TO MIX FROM BOTTOM TO TOP ALLOWING LIQUID TO FORM. COMPLETE MIXING TO A SMOOTH CONSISTENCY, TOTAL MIXING TIME NOT TO EXCEED 2 MINUTES.
- MIX CONTENTS WITH A PAINT STIRRER OR A PAINT MIXING PADDLE ON A VARIABLE SPEED 1/2" ELECTRIC DRILL.

THINNING THIS PRODUCT IS NOT RECOMMENDED AND CAN

SUBSTANTIALLY REDUCE PRODUCT EFFECTIVENESS

MIX SLOWLY - DO NOT OVER MIX - MIX TO A CREAMY CONSISTENCY

MIXING TOO FAST OR OVER MIXING WILL DAMAGE

THE CERAMIC PRODUCT AND REDUCE ITS EFFICIENCY

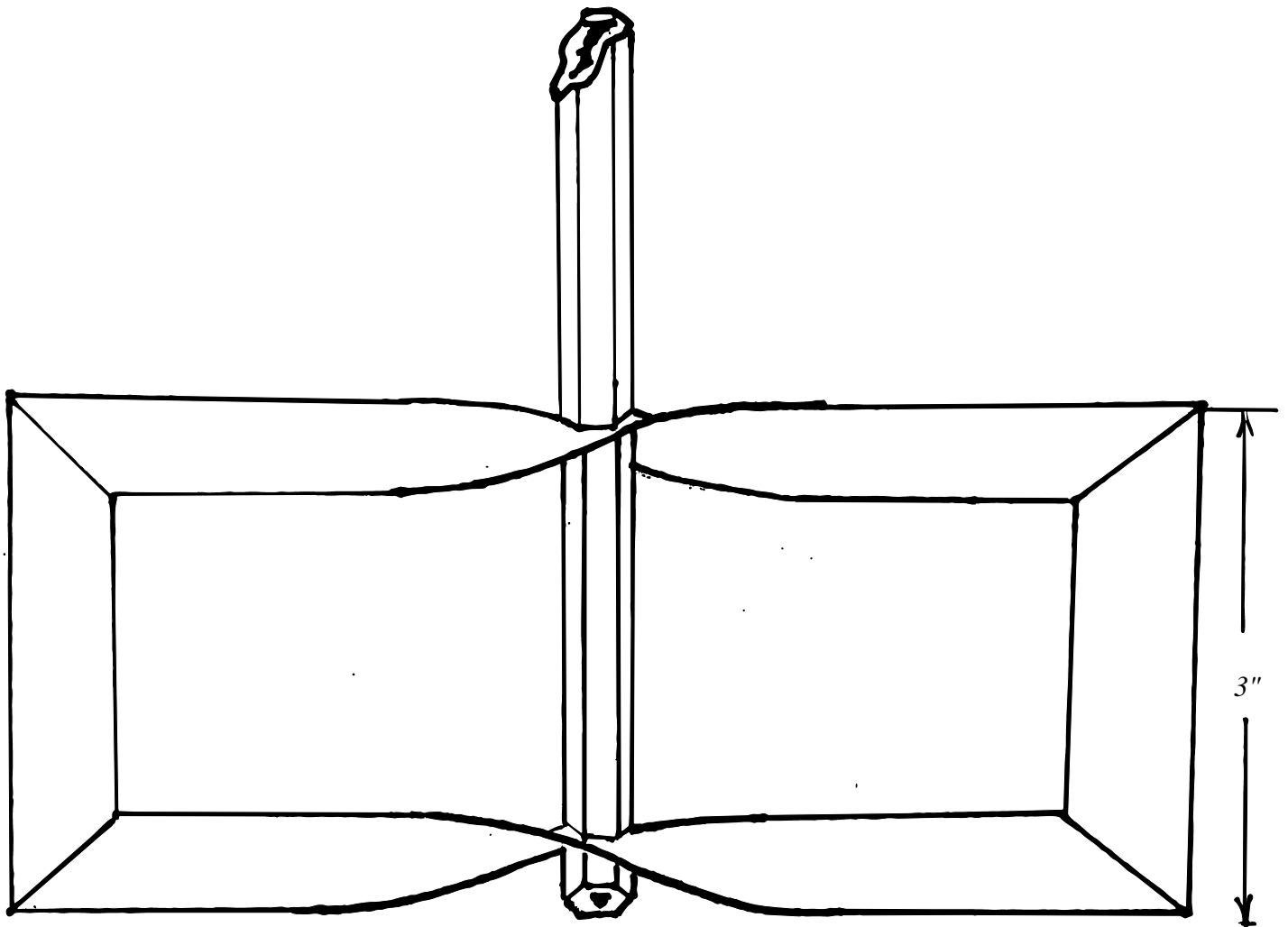
STRAIN PRODUCT BEFORE SPRAYING

DO NOT APPLY TOO THICK. APPLY BY BRUSH, AIRLESS SPRAY, ROLLER or Quik Gun. ONE THIN COAT OF PRODUCT AT A TIME. EACH COAT MUST FLASH OR BE ALLOWED TO DRY COMPLETELY BEFORE APPLYING SECOND COAT. ♦♦(see pg 3)

- APPLYING TOO THICK WILL CAUSE BLISTERING AND PREVENT ADHERENCE.
- PRODUCT SHOULD BE APPLIED ONLY TO CLEAN, FIRM, DRY SURFACES CLEAN OF ALL FOREIGN MATTER INCLUDING OIL AND GREASE.
- WHEN APPLYING PRODUCT TO SURFACES WITH TEMPERATURES 90°F THIN COATS SHOULD BE APPLIED AND ALLOWED TO DRY THOROUGHLY BEFORE APPLYING SUBSEQUENT COATS.* MULTIPLE COATS CAN BE APPLIED UNTIL THE DESIRED RESULT IS ACHIEVED. APPLICATION IN THICK COATS WHICH CAUSES BLISTERING WILL VOID THE WARRANTY.
- WHEN APPLYING WITH A ROLLER, WETTING ROLLER SURFACE WILL SPEED APPLICATION.
- APPLY PRODUCT IN COATS OF 15 (+/-) MIL THICKNESS. TEST RESULTS INDICATE THAT A 15 MIL THICKNESS CAN CREATE AN "R" FACTOR EQUIVALENT TO R-19/20.
- PRODUCT CAN BE TINTED ALMOST ANY PASTEL COLOR WITH CONVENTIONAL LATEX TINT AVAILABLE FROM YOUR LOCAL PAINT STORE.
- CLEAN UP - PRODUCT HAS A LATEX BASE AND CAN BE CLEANED UP IMMEDIATELY FOLLOWING APPLICATION WITH SOAP AND WATER.

**Prime All Surfaces Prone To Rust
Strain All TEMP-COAT® Products**

Diagram of a standard drywall mud mixing paddle which has been cut down to three (3) inches in depth. This width allows the paddle to spin freely under the insulation material



and draw upward to mix the TEMP-COAT® to smooth-creamy consistency.

Note: Screw type paddles will shear beads faster than a flat surface.

TEMP-COAT®

A DESCRIPTIVE USE OF AIRLESS SPRAY EQUIPMENT FOR USE WITH TEMP-COAT® & TEMP-COAT® PRODUCT PREPARATION

THE TERM AIRLESS DEALS WITH THE ACTION OF THE PUMP THAT DELIVERS A PRODUCT. THE TERM AIRLESS SIGNIFIES THAT THE PRODUCT THAT COMES OUT OF A SPRAY GUN IS 100% PRODUCT AND IS NOT MIXED WITH AIR.

AIRLESS SPRAY EQUIPMENT IS “POWERED” BY AN ASSORTMENT OF ENERGIES. THE POWER CAN BE AIR COMPRESSOR, GASOLINE ENGINE, DIESEL ENGINE, ELECTRIC MOTOR, HYDRAULIC MOTOR OR SOME COMBINATION THEREOF.

QUITE OFTEN, ESPECIALLY IN INDUSTRY, YOU WILL BE TOLD THAT TEMP-COAT® CAN BE APPLIED USING CONVENTIONAL PAINT POTS OR CONVENTIONAL SPRAY EQUIPMENT THAT MIXES WITH AIR AS THE PRODUCT COMES OUT OF THE PAINT GUN. THESE TYPES OF EQUIPMENT WILL NOT WORK WITH TEMP-COAT® BECAUSE OUR PRODUCT IS EXTREMELY LIGHT WEIGHT (AT LESS THAN 5.9 LBS. PER GALLON) CAUSING THE GUN TO SPIT RATHER THAN SPRAY.

CHOOSING SPRAY EQUIPMENT:

THERE ARE A NUMBER OF MANUFACTURERS OF AIRLESS SPRAY EQUIPMENT CAPABLE OF SPRAYING TEMP-COAT®. GRAYCO, AERO, SPEEDFLO, BINKS TO NAME A FEW. THE IMPORTANT CONSIDERATIONS IN CHOOSING A PIECE OF EQUIPMENT, DEAL WITH HOW THE EQUIPMENT WILL BE USED AND THE NATURE OF THE JOBS YOU EXPECT TO BE PERFORMING.

OVER THE YEARS, WE HAVE FOUND THE BEST ALL-ROUND PUMP FOR THE JOB IS THE GRACO 28 TO 1 BULLDOG, OR LARGER. WE LIKE THE GRACO BECAUSE IT IS A UNIVERSAL MACHINE AND PARTS CAN BE FOUND ANYWHERE FOR THE PUMPS. THE BULLDOG IS ALSO ONE OF THE BEST PUMPS IN THE AIRLESS LINE FOR GRACO THEREFORE THEY ARE PLENTIFUL, EASY TO ACQUIRE AND PARTS ARE STOCKED VIRTUALLY ANYWHERE GRACOS' ARE SOLD WORLDWIDE.

THE BULLDOG WILL REQUIRE AMPLE AIR SERVICE TO POWER THE MACHINE. THE SOURCE OF AIR MUST BE A CONSTANT 40 TO 50 PSI WITH ENOUGH VOLUME TO KEEP THE MACHINE MOVING. USUALLY A COMPRESSOR THAT DELIVERS 185 CFM IS SUFFICIENT TO PROVIDE THE AIR POWER TO OPERATE THE PUMP. LARGE PUMPS LIKE THE GRACO 56 TO 1 MAY REQUIRE A LARGER COMPRESSOR LIKE THE 325-CFM. ATTEMPTING TO APPLY PRODUCT WITH TWO GUNS FROM A SINGLE MACHINE OR LARGER AIRLESS PUMPS COULD REQUIRE LARGER COMPRESSORS. A 3/4TH INCH AIR LINE FEEDS THE MACHINE, GIVING IT ENOUGH VOLUME TO DRIVE THE PUMP. MOST PLANT SIGHTS HAVE ADEQUATE AIR AVAILABLE. YOU WILL NEED A GOOD REGULATOR AND WE RECOMMEND A WATER SEPARATOR BETWEEN THE PLANT AIR SOURCE AND THE PUMP BECAUSE MOST PLANT AIR IS FILLED WITH CONDENSATION AND IS CONSIDERED “WET”. THE MOISTURE IN THESE LINES CAN CAUSE SEVERAL PROBLEMS. IT CAN PUT TOO MUCH WATER IN THE PRODUCT MAKING TEMP-COAT® HARDER TO DRY AND IT CAN ADD IMPURITIES TO THE PRODUCT AFFECTING THE BONDING.

GRACO ALSO MAKES THE 7000 WHICH IS A GASOLINE POWERED 28 TO 1 PUMP. THIS PUMP IS A WISE CHOICE FOR THE ROOFING INDUSTRY. THE 7000 (OR THE UPDATED 7900) IS DESIGNED

TEMP-COAT® EQUIPMENT AND PRODUCT PREPARATION

TO PUMP HEAVY FLUIDS LONG DISTANCES AND BECAUSE OF THIS, IT CAN DELIVER TEMP-COAT® WELL ON ALMOST ANY ROOFING JOB. PLEASE KEEP IN MIND THAT FOR INDUSTRIAL PURPOSES, MOST PLANTS WOULD PREFER TO SEE AN AIR OPERATED MACHINE AND FREQUENTLY WILL RESTRICT THE USE OF GAS OR ELECTRIC EQUIPMENT IN THEIR PROCESS UNITS. THE 7000 IS THE ONLY GASOLINE POWERED UNIT IN THE GRACO LINE WHICH IS DESIGNED TO PUMP HEAVY MASTICS OR OUR PRODUCT. THE OTHER GASOLINE DRIVEN PUMPS ARE DESIGNED TO SPRAY PAINT WHICH DOES NOT REQUIRE AS STOUT A PUMP.

CHOOSING A SPRAY GUN:

WE HAVE REVIEWED A NUMBER OF SPRAY GUNS AND HAVE FOUND THE GRACO “PLUS” GUN TO BE OF HIGHER QUALITY AND MORE PROFICIENT THAN ANY OTHER WE HAVE TESTED FOR APPLYING TEMP-COAT® THIS GUN DOES HAVE SEVERAL SENSATIVE PARTS AND IT MUST BE CLEANED CONSTANTLY, INSIDE AND OUT TO ASSURE PROPER OPERATION AND TROUBLE FREE DELIVERY. I CANNOT EMPHASIZE ENOUGH THE NEED TO MAINTAIN, CLEAN AND LUBRICATE THIS EQUIPMENT. FAILURE TO DO SO WILL GUARANTEE YOU DISCOMFORT AND FRUSTRATION ON THE JOB. THE BINKS M-I IS EXPENSIVE BUT ALSO A GOOD CHOICE.

ESSENTIAL PARTS FOR A COMPLETE RIG:

- 1 SPRAY UNIT SUITED FOR YOUR SITUATION
REQUIREMENTS ARE A PUMP RATED AT 28-1 THAT DEVELOPS 3000 PSI THAT DELIVERS AT LEAST 3 GALLONS PER MINUTE (3 GPM)
 - 2 LENGTHS OF 50 FT. HD, 3000 LB. 3/8TH INCH DELIVERY HOSE
 - 2 17/1000 TIPS
 - 2 21/1000 SPRAY TIPS
 - 2 DUCK BILL TIP HOLDERS
 - 1 REGULATOR-WATER SEPARATOR
 - 1 CHICAGO AIR CONNECTION ADAPTER
 - 1 TOOL BOX WITH ASSORTED TOOLS WRENCHES AND ETC.
- NOTE: A WHIP CANNOT BE USED WITH THIS PRODUCT.

CARE & USE OF AN AIRLESS RIG USED FOR TEMP-COAT® APPLICATIONS:

AIRLESS SPRAY EQUIPMENT AND THE COMPONENT PARTS INCLUDING HOSES, GUNS AND TIPS ARE ONLY AS GOOD AS THE MAINTENANCE AND CARE THEY RECEIVE.

FROM EXPERIENCE WE KNOW THAT YOU CANNOT GET THE INSIDE OF YOUR HOSES AND MACHINE CLEAN ENOUGH. THE MORE YOU WASH THEM, THE BETTER THEY WILL PERFORM NEXT TIME YOU USE THEM.

TEMP-COAT® CONTAINS CERAMICS THAT CONSTANTLY POLISHES AND SANDS DOWN THE INSIDE OF YOUR EQUIPMENT. WHEN YOU LEAVE PARTICLES OF TEMP-COAT® IN EQUIPMENT THE NEXT USE WILL GRIND THIS RESIDUE OFF THE WALLS AND TRY TO PASS THE CHIPS THROUGH THE SMALL HOLE IN THE TIP. THIS WILL CAUSE CONSTANT COLGGING OF THE TIP AND GUN WHICH WILL CAUSE WASTED TIME AND PRODUCT AS WELL AS DAMAGED EQUIPMENT.

NEVER ALLOW PRODUCT TO SIT IN THE PUMP, HOSES, GUN OR TIP UNNECESSARILY. TEMP-COAT® IS VERY HIGH IN SOLIDS AND DRIES VERY RAPIDLY. FAILURE TO KEEP THE HOSE, GUN AND PUMP COOL AND PREVENT DRYING IN THE SYSTEM WILL CAUSE NUMEROUS, EXPENSIVE PROBLEMS.

TEMP-COAT® EQUIPMENT AND PRODUCT PREPARATION

HERE ARE A FEW TIPS TO MAKE YOUR EQUIPMENT LAST LONGER AND PERFORM BETTER:

- 1) **ALWAYS CHECK THE OIL IN THE MOTOR AND THE PUMP LUBRICATION CUP BEFORE STARTING THE UNIT.**
- 2) **USE TEFLON TAPE ON ALL HOSE AND GUN FITTINGS AND MAKE CERTAIN THAT THEY ARE TIGHT.**
- 3) **INSPECT HOSE THOROUGHLY FOR CHAFING, CRACKS OR KINKS THAT COULD DAMAGE THE MASHINE OR CAUSE PERSONAL INJURY.**
- 4) **MAKE CERTAIN THAT YOUR HOSE IS A MINIMUM OF 3/8TH INCH AND IS A HEAVY DUTY 3000 PSI HOSE.**
- 5) **HAVE CLEAN BUCKETS OF WATER ON HAND TO PRIME THE PUMP AND TO CATCH ANY DISCHARGE YOU MAY HAVE.**
- 6) **CHECK THE PUMP BYPASS VALVE ADJACENT TO THE SPRAY HOSE ON THE PUMP TO MAKE SURE IT IS CLEAN AND CLEAR AND FUNCTIONAL.**
- 7) **MAKE CERTAIN THAT THE PICK-UP TUBE IS CLEAN AND CLEAR.**
- 8) **MAKE CERTAIN THAT YOUR AIR PRESSURE GAUGE AND VALVE ARE FUNCTIONAL AND READING PROPERLY.**
- 9) **SPRAY AMPLE WATER THROUGH THE HOSE AND GUN TO MAKE CERTAIN IT IS CLEAN AND WORKING PROPERLY.**
- 10) **WE RECOMMEND STORING YOUR PUMP BY RUNNING DIESEL FUEL THROUGH THE PUMP AND INTO THE HOSE. CITY WATER CONTAINS CHLORENE THAT WILL PIT YOUR PUMP SHAFT AND IT IS EXTREMELY EXPENSIVE TO REPAIR. MAKE NO MISTAKE ABOUT IT, CITY WATER WILL DESTROY YOUR PUMP.**
- 11) **WHEN THE DAY IS THROUGH, COMPLETELY DISASSEMBLE YOUR GUN AND CLEAN EVERY PART OF IT. A REPLACEMENT SPRING RELEASE SYSTEM FOR A PLUS GUN COSTS OVER \$60.00. BE CAREFUL NOT TO BEAT ON THE BALL SEAL AT THE TIP OF THE SPRAY GUN. DAMAGING THIS BALL OR BENDING THE SPRING AT ALL WILL RUIN THIS PART. USE A LIGHT OIL OR VASALINE TO LUBRICATE THIS MECHANISM WHEN IT IS RETURNED TO THE GUN.**
- 12) **STORE YOUR PUMP AND HOSES WITH DIESEL WATER IN THEM. THIS WILL PREVENT THE HARDENING OF PRODUCT IN THE LINES. FLUSH THE LINES WITH WATER BEFORE USING AGAIN WITH TEMP-COAT® TO REMOVE THE OILY WATER. PRIME THE PUMP WITH CLEAN WATER TO AFFECT THE PICK-UP OF TEMP-COAT®**

HERE ARE A FEW TIPS TO MAKE YOUR JOB EASIER AND YOUR PRODUCT FUNCTION BETTER:

- 1) **KEEP BUCKETS OF PRODUCT IN A COOL PLACE AND DO NOT OPEN ANY SOONER THAN NEEDED.**
- 2) **ALWAYS WORK ON A TARP OR DROP CLOTH TO KEEP YOUR SURROUNDINGS CLEAN AND FREE FROM CONTAMINENTS.**
- 3) **CARRY EXTRA BUCKETS OR A WASTE BARREL FOR EXCESS WASH WATER. DO NOT DUMP WASH WATER ON THE CUSTOMERS PREMISIS WITHOUT HIS EXPLICIT PERMISSION.**
- 4) **WHEN YOU ARE SPRAYING, KEEP EXTRA TIPS ON HAND. TIPS AND DUCK-BILLS WILL GET CLOGGED WITH TEMP-COAT AND MUST BE CLEANED AS THE DAY PROGRESSES.**
- 5) **ALWAYS HAVE BASIC TOOLS ON HAND TO CONNECT AND REPAIR EQUIPMENT.**
- 6) **ALWAYS CHECK THE PUMP OIL LEVEL AND GAS ENGINE OIL LEVEL BEFORE STARTING.**

TEMP-COAT® EQUIPMENT AND PRODUCT PREPARATION

- 7) **ALWAYS REMOVE ALL KINKS FROM HOSES BEFORE BEGINNING. HIGH PRESSURE HOSES ARE VERY STIFF AND SUBJECT TO KINKS THAT CAN CAUSE DAMAGE AND INJURY.**

- 8) WHEN YOU FIRST OPEN A BUCKET, MAKE A GROOVE ABOUT ONE INCH DEEP AROUND THE EDGE OF THE PRODUCT. POUR A SMALL AMOUNT OF WATER (ABOUT 2 OUNCES) IN THIS GROOVE AND IT WILL BREAK THE FRICTION BETWEEN THE BUCKET AND PRODUCT MAKING MIXING MUCH EASIER. WAIT A FEW MINUTES BEFORE MIXING. BE CAREFUL NOT TO ALLOW THE FLAT MIXING PADDLE TO SCRAPE THE SIDE OF THE BUCKET. BLACK FOULINGS CAN CAUSE A BLOCKAGE IN THE GUN AND CAUSE EXTREME DOWN TIME.
- 9) DO NOT OVER MIX THIS PRODUCT. IF YOU MIX MORE THAN TWO (2) MINUTES, YOU ARE CAUSING EXCESSIVE DAMAGE TO THE INSULATING QUALITIES OF THE PRODUCT. AGAIN, DO NOT OVER MIX.
- 10) WHEN SPRAYING, ALWAYS HOLD YOUR GUN AT A 90-DEGREE ANGLE TO YOUR WORK. FOR ROOF SURFACES IN PARTICULAR, COVERAGE SHOULD BE AT A RATE OF 60 SQUARE FEET PER GALLON. MARK OFF A 6 FT. BY 10 FT. SECTION OF ROOF AND THAT SHOULD TAKE ONE GALLON TO SPRAY. THIS WILL ASSIST YOU IN ADJUSTING TO A CONTINUOUS SPRAY RATE.
- 11) IF YOU STOP SPRAYING FOR A BREAK OR FOR LUNCH, DROP THE GUN IN A BUCKET OF WATER AND COVER THE HOSE, PRODUCT AND PUMP WITH A TARP TO PREVENT EXCESSIVE DRYING OUT OF THE PRODUCT.
- 12) WHEN SPRAYING MULTIPLE COATS, ALWAYS ALLOW THE PRODUCT TO FLASH (DRY TO A DULL, NON GLOSSY CONDITION) BEFORE APPLYING ANOTHER COAT.
- 13) WHEN SPRAYING HOT SURFACES, ALWAYS START OFF WITH A MIST COAT, FOLLOWED BY A VERY THIN COAT. SUBSEQUENT COATS SHOULD BE THIN (APPROXIMATELY 15 MILS) WITH DRYING BETWEEN COATS. IF YOU APPLY THIS PRODUCT ANY THICKER IT WILL NOT HAVE TIME TO GAS-OFF AND WILL BLISTER. (PRODUCT TEMPERATURE RANGE -80 f TO + 350 f AND HIGHER, SEE PRODUCT DATA SHEETS).
- 14) ON SMALLER JOBS, TWO MEN CAN DO AN ADEQUATE JOB. ON LARGER JOBS, EFFICIENCY IS OBTAINED USING THREE MEN. ONE MAN OPERATES THE PUMP AND MIXES, ONE MAN SPRAYS AND THE THIRD RELIEVES THE SPRAYER AND ACTS AS HIS ASSISTANT. ON LARGE JOBS PRODUCTIVITY IS LOST IF IT IS PERFORMED WITH TWO MEN.
- 15) WHEN SETTING THE PUMP UP FOR SPRAYING, START AT ABOUT 35 psi. IF THE GUN WILL NOT SPRAY FLUIDLY, INCREASE THE PRESSURE SLIGHTLY. THE OBJECT IS TO HAVE THE GUN SPRAY CONTINUOUSLY BUT WHEN YOU RELEASE THE TRIGGER, HAVE THE PUMP STOP WITHIN ONE STROKE. IF THE PUMP CONTINUES AFTER YOU RELEASE THE TRIGGER, THE PRESSURE IS TOO HIGH. BETWEEN GROUND LEVEL AND 20 FEET, THE PUMP SHOULD PERFORM PROPERLY BETWEEN 35 AND 45 psi. THE GREATER THE LENGTH OF HOSE, THE GREATER THE FRICTION AND THE HIGHER THE PRESSURE MUST BE TO PUSH THE PRODUCT THROUGH. THE SAME APPLIES TO HEIGHTS.

**PRODUCT MIXING INSTRUCTIONS TEMP-COAT® 101, INSUL-ALL™ AND
TEMP-COAT® ROOFING & SIDING**

**TEMP-COAT LIQUID ACRYLIC LATEX CERAMIC INSULATION IS NOT A PAINT
AND CANNOT BE TREATED AS A PAINT. THE PRODUCT IS FILLED WITH HOLLOW CERAMIC BEADS WITH A VERY HIGH CRUSH STRENGTH, ALLOWING THE PRODUCT TO BE USED ON WALKING SURFACES AND IN OTHER VERY HARSH CONDITIONS WITHOUT BEING COMPROMISED.**

TEMP-COAT EQUIPMENT AND PRODUCT PREPARATION

WHEN A BUCKET OF TEMP-COAT IS OPENED, THE PRODUCT LOOKS LIKE SHEET-ROCK MUD. THIS IS BECAUSE THE LIQUID IS AT THE BOTTOM AND THE CERAMIC BEADS HAVE ACCUMULATED AT THE TOP OF THE BUCKET. USE A PENCIL, SCREW- DRIVER, PAINT STICK OR SIMILAR OBJECT AND MAKE A GROOVE BETWEEN THE BUCKET WALL AND THE PRODUCT. POUR ABOUT TWO OUNCES (2 OZ.) OF CLEAN WATER AROUND THE VALLEY YOU

HAVE MADE. ALLOW BUCKET (S) TO SET FOR ABOUT 10 TO 15 MINUTES AS YOU PREPAIR YOUR EQUIPMENT FOR APPLICATION. THE WATER WILL SEEP ALONG THE SIDES OF THE BUCKET AND BREAK THE SURFACE TENSION MAKING THE PRODUCT MUCH EASIER AND FASTER TO MIX.

NOTE: THE STEP RECOMMENDED ABOVE WILL HELP SAVE TIME, EFFORT AND IT WILL REDUCT THE CHANCE OF HITTING THE SIDES OF THE BUCKET WITH THE PADDLE. IF YOU HIT THE BUCKET WITH THE RECTANGULAR PATTLE, YOU COULD EASILY CHIP THE BUCKET AND CAUSE PLASTIC FLAKES THAT WILL CLOG YOUR GUN AND HOSES. THIS WILL REQUIRE EXCESSIVE CLEANING OF HOSE AND GUN PLUS DOWN TIME IN THE APPLICATION PROCESS.

HITTING THE BUCKET SIDES WITH THE PADDLE WILL CREATE THE NEED TO STRAIN THE PRODUCT AS DESCRIBED IN THE TRAINING VIDEO. THIS STEP MAKES THE PRODUCT MUCH MORE DIFFICULT TO DEAL WITH.

WHEN MIXING TEMP-COAT, A STANDARD RECTANGULAR SHEETROCK MUD PADDLE SHOULD BE USED. DAISY OR SWIRL TYPE PADDLES SLICE THE BEADS AND REDUCES THE EFFECTIVENESS OF THE PRODUCT.

USING A ½ INCH (PREFERABLY A VARIABLE SPEED) DRILL MOTOR, HOLD THE BUCKET FIRMLY BETWEEN YOUR FEET AND BEGIN TO MIX SLOWLY, PULLING THE PATTLE UPWARDS TO MIX THE FLUID WITH THE CERAMIC BEADS.

IF YOU MIX THE PRODUCT FOR MORE THAN TWO MINUTES (2 MIN.) YOU TAKE A CHANCE OF DAMAGING THE BEADS AS THEY GRIND TOGETHER.

MANY APPLICATORS HAVE BEGUN USING A METAL (ALUMINUM OR STAINLESS) 10 GALLON POT OR LARGER TO MIX THE PRODUCT IN. THIS TOTALLY ELIMINATES THE POSSIBILITY OF FLAKEING PLASTIC INTO THE PRODUCT THAT CAN CLOG THE HOSES AND THE GUN.

IF A PORTION OF A BUCKET IS USED AND THE BALANCE STORED FOR FUTURE USE. WE HIGHLY RECOMMEND THAT YOU STRAIN THE PRODUCT BEFORE ATTEMPTING TO SPRAY. TEMP-COAT IS A VERY DRY PRODUCT AND ANY DRY PRODUCT WHICH ADHERES TO THE BUCKET WALL COULD FALL INTO THE MIX AND BLOCK THE SPRAY TIP.

PLEASE CALL OR WRITE FOR
ASSISTANCE OR INSTRUCTIONS

e-mail INFO@TEMPCOAT.COM TOLL FREE 1-800-950-9958

TEMP-COAT® Industrial Applications

Product Installation

Unlike Residential and Commercial, Industrial applications of *TEMP-COAT®* include their own specialized and unique set of installation challenges. The reasons for these changes are wide and varied but most commonly include:

- Acidic and Corrosive Atmospheres
- Excessive Heat
- Excessive Moisture
- A Combination of Challenges
- Unknown Heat and Cold Quantities
- Personnel Protection
- Corrosion Created by Insulation
- Specific Industrial Requirements
- Working with the Companies Other Contractors
- Scheduling
- Unique Tolerances
- Stringent and Necessary Rules and Safety Procedure

Our entire product line is geared to provide solutions to industrial problems. A first hand knowledge of our product's uses is required to properly service industry. Although these instructions are written specifically for *TEMP-COAT®* Brand Products, the need to know also applies to *MagiCeal*, *RealSeal*, *Slip-Gard*, *Ultra-Flex*, *Last-A-Span* and *Primal Green* products as well.

Important Guidelines in the Use and Application of TEMP-COAT®

- Do Not Allow TEMP-COAT® To Freeze
- Follow Mixing Instructions Precisely
- Do Not Over Mix As The Thermal Capability Could Be Jeopardized
- Use Last-A-Span Mastic Or Other Suitable Mastic Where Applicable
- Follow The Published General Application Instructions For Best Results
- Allow Ample Drying Time Before Sunset, Approaching Inclement or Cold Weather
- Apply Only To Dry Surfaces Or Use Drying Apparatus To Aid In Curing Of The Product
- TEMP-COAT® Can Be Tinted Most Light To Pastel Color
- Last-A-Span Is Not Recommended For Use As A Stand Alone, But As A Suitable Sub-Surface Mastic To Which TEMP-COAT® Will Bond.
- Note: Always obtain information about in plant disposal of waste water or removal of water from facilities.

SAFETY

TEMP-COAT® Brand Products/Span-World Distribution makes available a complete *CORPORATE CONTINGENCY PLAN*, Document #QP4070 which outlines those policies required for a professional and safe business operation on and off industrial sites. All distributor/installer personnel are required to take instruction from this manual and to be briefed on these procedures when representing *TEMP-COAT®* and *TEMP-COAT®* Brand Products. See pages 2-17 thru 2-22 of your *Sales and Product Knowledge Manual*.

TEMP-COAT®

EELIMINATES

MANY

PROBLEMS

-

COSTING

OWNERS AND OPERATORS

A LOT OF

TIME AND MONEY



Safety is important. It is the most important obligation an owner or operator has to his personnel.

That's why *TEMP-COAT®* has created a line of products and convenient packaging allowing the worlds most versatile insulation to be conveniently and inexpensively placed wherever insulation is needed for touch up or full scale insulation work.

TEMP-COAT® works well on both convective and conductive heat and cold.

TEMP-COAT® adheres to any clean dry surface up to 350° F and will perform well on temperatures up to 500° F**.

When a hot spot is detected that can cause discomfort or harm to personnel, a container of *TEMP-COAT®* can be deployed immediately to correct the problem area. And it is LATEX; therefore application equipment cleans up fast with soap and water.

** temperatures greater than 350° F require the use of a mesh/membrane to assure the products adhesion in the face of extreme expansion and/or contraction.

INDUSTRIAL REQUIREMENTS

Safety First

Instruction and training was designed with industry in mind with a constant emphasis on being a good *Quality Vendor and Contractor* to industry.

Industrial requirements will always supersede our requirements in performance of our job assignment therefore you and your installers must be creative and flexible in working with your employer or his contractor.

Most industrial applications are standard and the general knowledge and ability is learned within your training.

Deviations can occur within industrial applications due to time restraints, extreme heat or cold conditions, working conditions and scheduling. Always remember that industry has far greater problems and objectives than you and your needs. Be flexible and understanding in working with these giants. We have a lot to offer them but we respectfully offer it on their terms.

Among the most obvious advantages you offer are:

- *Ease and Speed of Application*
- *Eliminate Waste and Over Application*
- *Adheres to Surfaces Eliminating Corrosion*
- *Contains No Volatile Organic Compounds*
- *Ease and Speed of Repair*
- *Affords for Visible Inspection*
- *Personnel Protection*

These advantages and many others create a need, fills a void and improves the quality of insulation for industry.

ABATEMENT AND ENCAPSULATION

Keep in mind that you are not an abatement company and that proper protection and precautions should be taken when dealing with asbestos, foam, fiberglass, wool or any other form of insulation. Always comply thoroughly and completely with all OSHA, EPA and Plant rules and regulations. Contact Span-World Distribution about companion products such as Loc-Down, FireLoc, etc.

SPECIFIC NEEDS OF INDUSTRY

Insulation represents a primary cost factor to industry.

In a new industrial environment dominated by regulations, humanitarian concerns, efficiency, conservation and ecological effectiveness, industry must react to the need for a cleaner, safer work sight and adhere to good neighbor policies.

Among their concerns are *personnel protection, proper operating temperatures, corrosion that forms under conventional insulation and heat tracing.*

In tests performed on behalf of McDonnell Douglas Corporation at Purdue University Technology Properties Research Laboratories, *TEMP-COAT®* provides very formidable insulation qualities which when added to its other features, provides breakthrough technology for industry.

The advantages are stated in our checklist advertisement qualifying the temperature over which we can operate (copy attached).

The last obvious advantage which make us attractive to industry is the fact that we can generally eliminate jacketing except under the most acidic conditions (which is an industry call) and as a coating, we are much less expensive to install.

Keep in mind that acceptance of *TEMP-COAT®* Brand Products along with our other products does not automatically mean you will have the ability to install for that company. Most industrial manufacturers have their coating and insulation contractor in place and under contract therefore you may be required to train these contractors to use and install our products. This is a decision we expect our distributor/installers to honor and approach with diligence in accordance with our mutual commitments.

As a part of that commitment, *TEMP-COAT* Brand Products, LLC will issue certificates to trained installers and Quality Installation Certificates to those who complete the entire program.

TEMP-COAT® Brand Products

INDUSTRIAL INSTALLATION GUIDE

SIDEWALLS & ROOF TOPS - Conventional; Hip, Gable, Lean-to, Metal (Aluminum, Stainless, Copper, Galvanized), Seal Tab, Rubber, Roll Goods

- 1) Inspect the roof/sidewall from the underside for the condition of purlins, rafters, substrate and for signs of degradation.
- 2) Question occupants of the building as to condition, leaks, wind or roof/sidewall noises or any other specific roof/sidewall problems.
- 3) Sand rusted areas with fiber pads removing loose scale and surface rust. Treat all rust and corrosion with *Q 2 Neutralizing Treatment*. When Q 2 is used it is recommended that the treated surface be primed preventing bleed through.
- 4) Follow owners instructions/recommendations for priming rusted or corroded metals. Apply ●●*Last-A-Span Elast-O-meric Mastic* to all pitted or damaged areas using fiberglass webbing where applicable or metal patching as required.

At owners option, and if available, replace badly corroded roof/sidewall panels with like and kind parts and materials or varied materials at owners direction.

- 5) Tighten all bolts and screws. Replace missing, stripped or corroded bolts and screws.
- 6) Seal all risers, vertical seams, screws and bolts, vents, penetrations and parapet walls using fiberglass webbing where needed and ●●*Last-A-Span Elast-O-Meric Mastic*. On low pitched roofs use aluminum backed *Peel & Seal Tape* on all horizontal seams.
- 7) Seal around all sky lights and, if needed replace or re-coat with fiberglass.
- 8) Coat entire roof/sidewall surface with a 15 (+\-) mil (15/1000) thickness of *TEMP-COAT® Ceramic Insulation Coating* to complete the job and protect the roof/side-wall. Applying product to thick will inhibit proper drying.
- 9) **Clean up and inspect job site, removing all debris and used products, dispose of all materials, rags, rollers, wash water and other job related articles in accordance with the owner's rules and regulations.**
- 10) See Application Chart Figures 2 & 3 (page 4) to compute volume requirements.

●● Note: Last-A-Span Mastic is to be used only in conjunction with TEMP-COAT® and not as a stand alone.

ROOF TOPS - Built-up - Pitch & Gravel, Bituminous Composite and other similar roof surfaces **“Products Do Not Adhere Well to a Dirty Roof”**

By their very nature, Flat Roof Tops which are assembled with various fabrics and tar or hybrid mixes of bituminous material, have a limited life. Tars, as they are frequently called, begin to deteriorate the minute they cool therefore the installers and manufacturers offer little or not warranty on their work or their product.

Likewise, it is difficult, if not impossible to extend a warranty for roof protection on a roof that is dying the minute it is repaired.

Our warranty on a built up roof and a pitch & gravel roof is a thermal and radiant barrier warranty only which runs concurrently with the degradation of the roof surface itself.

Some distributors, on their own have offered and obtained roof maintenance contracts which bring them to the roof annually to inspect and repair the roof surface (usually in the spring). They also visit the property on a call basis when a problem arises. Something you may want to consider.

REPAIR AND COATING PROCEDURES (Ask us about Ultra-Flex) “Products Do Not Adhere Well to a Dirty Roof”

Note: Cracking or crazing may occur when TEMP-COAT® is applied over a rubber or other soft substrate.

- 1) Inspect the underside of the roof for conditions of substrate and purlin replacement. Report any structural damage to the owner and do so in writing before you accept the job.
- 2) Inspect the roof surface for cracks, blisters, old repairs, product disbonding along the edges, skylights, around vents and risers, parapet walls, drains and any roof mounted apparatus.
- 3) Compare specific reports of leaks with the condition of the roof surface. On flat roofs, leaks tend to migrate and are difficult to find.

PONDING (Ask us about Ultra-Flex)

- 1) Flood the entire roof surface or visit the roof immediately following a rain to locate ponding or any roof deformities caused by age or faulty construction which could cause the client future or continuing problems.
- 2) Mark all ponds with paint as they must be evaluated and treated separately.

Note: You are offering your client a thermal white reflective roof. When you have completed your task, the white pond bottom will reflect light unlike a black surface which heats & evaporates the water.

If a pond is too deep or too large, the continued and added pressure of the water in the pond could over time, degrade the roof. You are obliged to report these findings to the building owner. When a roof top is coated white, it will hold water for a longer period of time.

There are solutions to this problem which circumvent roof replacement. They are proven methods but we suggest that you consult a bonafide roofer and work with him to solve the problems.

- a) Mark the pond(s) and level with **Ultra-Flex**, light weight fibered concrete or other material(s) recommended by a certified roofer.
- b) Create a roof slope with tapered foam blocks for proper drainage.
- c) Jack up the roof from underneath and level.
- d) Build up the roof with similar composite material until the pond is leveled.

INSTALLATION

- 1) Follow all steps and procedures discussed above.
 - 2) Apply ***Last-A-Span Elast-O-Meric Mastic*** around all edges, vents, risers, skylights, roof penetrations and parapet walls. Use fiberglass webbing where applicable. We also recommend **Ultra-Flex** for repairs.
 - 3) Open all blisters and cracks. Apply several thin coats of **●●Last-A-Span** or if the opening is deep, fill and level the opening with Ultra-Flex or similar product filling the void. Cover the entire area with **●● Last-A-Span Elast-O-Meric Mastic** extending at least one foot to the outside of the effected area.
 - 4) Apply a 15 (+\-) mil thickness of **TEMP-COAT®** over the entire roof surface and skylights if requested by the client.
 - 5) Proceed to areas of ponding which were marked at the onset of the job. Roll or spray a 20 (+\-) mil thickness of **●● Last-A-Span** in the area of ponding to a distance of 12 inches around the outside of the pond.
 - 6) Clean up entire work area disposing of all job materials in approved containers and dispose or all wash water in accordance with clients requirements or remove from job site in sealed containers for proper disposal.
 - 7) See Application Chart Figures 2 & 3 (page 4) to compute volume requirements.
- Note:** Last-A-Span Mastic is to be used only in conjunction with TEMP-COAT® and not as a stand alone. Areas of severe ponding cannot be warranted.

CHILLED WATER PIPING - Non-Ferrous

- Temperatures from 43° F to operating conditions of 100° F.
- Apply to a shut down, dry system piping only.
- Apply *TEMP-COAT®* directly to piping following washing, descaling and degreasing.
- *TEMP-COAT®* application must be completely dry before system is activated.
- *TEMP-COAT®* can be applied over primers if required by customer using customers qualified primer and at customers direction.
- Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT®* should be applied in even thin coats, not to exceed 20 mils (20/1000 of an inch) allowing to flash between coats. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

If condensation is the issue, as much as 250 mils (1/4 inch) may be required. Conditions such as flow rates, ventilation, humidity, barometric pressure and equipment functions within a space may require additional product.

Accelerate the job whenever possible by using heat lights or heat guns to speed drying times of the acrylic latex base.

In high humidity and damp spaces drying times can take as long as 24 hours per 20 mil (20/1000 of an inch) thickness applied. Thorough drying between coats is imperative to assure blockage of condensation on chilled surfaces. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

TEMP-COAT® adheres to cold and chilled piping eliminating the air space and therefore preventing damage by corrosion. If the protected area should continue to condensate for any reason then the condensation lies on the surface of *TEMP-COAT®* and not on the pipe surface additional applications of *TEMP-COAT®* should eliminate sweating.

Varying thicknesses are required under different circumstances. If a customer wishes to deviate from the recommended thickness, he may find the applied thickness inadequate and more product must be applied. The volume of *TEMP-COAT®* applied to stop condensation generally exceeds that which is required to insulate the pipe.

Apply over fiberglass grid in areas of heavy traffic or in areas subject to abuse or harsh conditions.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

- Temperatures from 43° F to operating conditions of 100° F.
- Apply to a shut down, dry system piping only.
- Apply *TEMP-COAT*® directly to piping following washing, descaling and degreasing.
- *TEMP-COAT*® application must be completely dry before system is activated.
- *TEMP-COAT*® can be applied over primers if required by customer using customers qualified primer and at customers direction. *TEMP-COAT*® applies well over all non-bleeding primers and surfaces that do not contain Silicon or Teflon.

Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT*® should be applied in even thin coats, not to exceed 20 mils (20/1000 of an inch) allowing to flash between coats. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

If condensation is the issue, as much as 250 mils (1/4 inch) may be required. Conditions such as flow rates, ventilation, humidity, barometric pressure and equipment functions within a space may require additional product

Accelerate the job whenever possible by using heat lights or heat guns to speed drying times of the acrylic latex base. In high humidity and damp/wet spaces, drying times can take as long as 24 hours per 20 mil (20/1000 of an inch) thickness applied. Complete drying between coats is imperative to assure blockage of condensation on chilled surfaces. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

TEMP-COAT® adheres to cold and chilled piping eliminating the air space and therefore preventing damage by corrosion. If the protected area should continue to condensate for any reason then the condensation lies on the surface of *TEMP-COAT*® and not on the pipe surface additional applications of *TEMP-COAT*® should eliminate sweating.

Varying thicknesses are required under different circumstances. If a customer wishes to deviate from the recommended thickness, he may find the applied thickness inadequate and more product must be applied.

Apply over fiberglass grid in areas of heavy traffic or in areas subject to abuse or harsh conditions.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

See Application Charts (page 4 & 5 to compute volume requirements.

CHILLED WATER PIPE - Stainless Steel, Monel and Similar

TEMP-COAT® contains No Chlorides therefore is safe for use as a primer or an insulated coating on stainless steel.

- Apply to a shut down, dry system piping only.
- Apply *TEMP-COAT®* directly to piping following washing, descaling and degreasing.
- *TEMP-COAT®* application must be completely dry before system is activated.
- *TEMP-COAT®* can be applied over primers if required by customer using customers qualified primer and at customers direction.
- Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT®* should be applied in even thin coats, not to exceed 20 mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

If condensation is the issue, as much as 250 mils (1/4 inch) may be required. Conditions such as flow rates, ventilation, humidity, barometric pressure and equipment functions within a space may require additional product .

In high humidity and damp spaces drying times can take as long as 24 hours per 20 mil (20/1000 of an inch) thickness applied. Thorough drying between coats is imperative to assure blockage of condensation on chilled surfaces. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

Accelerate the job whenever possible by using heat lights or heat guns to speed drying times of the acrylic latex base.

TEMP-COAT® adheres to cold and chilled piping eliminating the air space and therefore preventing damage by corrosion. If the protected area should continue to condensate for any reason then the condensation lies on the surface of *TEMP-COAT®* and not on the pipe surface additional applications of *TEMP-COAT®* should eliminate sweating.

Varying thicknesses are required under different circumstances. If a customer wishes to deviate from the recommended thickness, he may find the applied thickness inadequate and more product must be applied.

Apply over fiberglass grid in areas of heavy traffic or in areas subject to abuse or harsh conditions.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

See Application Charts (page 4 &5) to compute volume requirements

Safety First

STEAM AND HEAT (Pipes under 42" OD)

At temperatures up to 300° F *TEMP-COAT*® will adhere to the clean dry surface.

On galvanized and ferrous metal surfaces a primer may be required and that product choice should rest with the plant management, customer. **We do not offer recommendations for high heat primers.**

TEMP-COAT® is to be installed in accordance with instructions provided. The primer must be applied in accordance with instructions supplied by the manufacturer.

- Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT*® should be applied in even thin coats, not to exceed 20 mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)
- On pipes that are heated, drying is almost instantaneous. Checking for dryness by touch to assure firmness is an adequate test to allow proceeding with a subsequent coat. If coats are applied too quickly, cracking can occur.
- To begin, mist or brush a very thin film of *TEMP-COAT*® (1 to 2 mils) on the clean, dry, scale free surface. This film should be extremely thin and act as an acrylic base for subsequent coats. This first coat, on a hot pipe will dry instantly.
- Apply the next coat to approximately a 5 (+\-) mil (5/1000 of an inch) thickness which will fairly well color the pipe. Again it will dry instantly.
- You now have a sufficient base to begin installation at a rate of 20 (+\-) mils (20(+\-)/1000 of an inch) at a time. Again, on hot pipes your work will dry instantly. On cold pipes, in well ventilated dry areas, several hours required between coats unless heat lamps or hot air is used to speed up the drying time.
- Repeat the process until the desired thickness is achieved. The installation instructions offers a suggested thickness table for average to worst conditions. Less product may be acceptable in well ventilated areas where maximum insulation is not required.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

On surfaces that will reach temperatures exceeding 350^o F, it is recommended that a fiberglass grid be placed before the final two coats. This 3/16" fiberglass mesh is available through TEMP-COAT® Brand Products or wherever stucco products are sold. A fiberglass grid performs several functions.

- Holds the product together in areas of high traffic or abuse.
- Assists in creating a leveling effect in areas where accuracy or appearance is extremely important.
- Keeps product on the pipe and functions even if the system experiences a high heat fluctuation which causes disbonding. The thermal capacity will perform extremely well in accordance with our commitment.
- *TEMP-COAT®* may be tinted, using a latex tint, most light to medium colors for color identification.
- See Application Charts (page 4 & 5) to compute volume requirements.
- Note: Dispose of all trash, waste & wash water in accordance with facilities instructions .

IT IS IMPORTANT TO NOTE THAT ALL FIBERGLASS MUST BE COVERED COMPLETELY OR THE FIBERGLASS CLOTH WILL ABSORB MOISTURE.

TEMP-COAT® does not require jacketing.

PIPE - WHEN PIPE IS COLD OR SYSTEM IS DOWN Safety First

- Apply to a shut down, dry system piping following washing, descaling and degreasing.
- *TEMP-COAT*® application must be completely dry before system is activated.
- *TEMP-COAT*® can be applied over primers if required by customer using customers qualified primer and at customers direction. **We do not offer recommendations for high heat primers.**
- *TEMP-COAT*® should be applied in even thin coats, not to exceed 20 (+/-) mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

Accelerate the job whenever possible by using heat lights or heat guns to speed drying times. Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions.

In high humidity and damp spaces drying times can take as long as 24 hours per 20 (+/-) mil (20/1000 of an inch) thickness applied. Varying thicknesses may be required. If a customer wishes to deviate from the recommended thickness, he may find the applied thickness inadequate and more product must be applied.

Apply over fiberglass grid in areas of heavy traffic or in areas subject to abuse or harsh conditions.

PIPE - WHEN PIPE IS HOT OR SYSTEM IS IN OPERATION

TEMP-COAT® will perform on temperatures to 350° F. Temperatures greater than 350° F require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction. *TEMP-COAT*® when applied at proper and recommended thicknesses will perform acceptability even after the inner layer turns medium brown and disbonds.

In High Temperature applications, surface temperature should be brought down to 350° F (+/-) or lower until a thickness of 60 (+/-) mils (60/1000 of an inch) or greater is achieved. On pipes that are heated, drying is almost instantaneous. Checking for movement and dryness by touch to assure firmness is an adequate test to proceed with a subsequent coat. If coats are applied too quickly, cracking can occur.

Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT*® should be applied in even thin coats, not to exceed 20 (+/-) mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

Galvanized and ferrous metal surfaces a primer may be required and that product choice should rest with the plant management, customer. **We do not offer recommendations for high heat primers.**

- To begin, mist or brush a very thin film of *TEMP-COAT®* on the clean, dry, scale free surface. This film should be extremely thin and act as an acrylic base for subsequent coats. This first coat, on a hot pipe will dry instantly and on a cold dry pipe will cure in 10 to 15 minutes.
- Apply the next coat to approximately a 5 (+\-) mil (5/1000 of an inch) thickness which will fairly well color the pipe. Again it will dry instantly.
- You now have a sufficient base to begin installation at a rate of 15 (+\-) mils (15/1000 of an inch) at a time. Again, on hot pipes your work will dry instantly.
- Repeat the process until the desired thickness is achieved. The installation instructions offers a suggested thickness table for average to worst conditions. Less product may be acceptable in well ventilated areas where maximum insulation is not required.

Larger pipes expand and contract more when heated to 350° F + giving cause for *TEMP-COAT®* to crack or create a space between the inner surface of *TEMP-COAT®* and the pipe(s) or the insulated surface.

In order to protect insulation from cracking, several procedures may be used to keep insulation in place and functioning.

- Apply required thickness. When this is achieved and dry, create a sleeve or coat of woven Nomex or fiberglass saturated in *TEMP-COAT®* as a finished coat.
- Use fiberglass mesh in final coats and center coat creating a strong membrane within the product to support the insulating cast.
- Use chopped shredded fiberglass fibers in the *TEMP-COAT®* as a fiber binder to keep the product in place around the pipe or item to be insulated.

IT IS IMPORTANT TO NOTE THAT ALL FIBERGLASS MUST BE COVERED COMPLETELY OR THE FIBERGLASS CLOTH WILL ABSORB MOISTURE.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information on page 25)

See Application Chart Figure 1 (page 1) to compute volume requirements.

For Chill or Cold Piping see (Pg 25), (Pg 26), (Pg 27)

VALVES (If cold refer to cold pipe installation procedure)

The obvious advantage to using *TEMP-COAT®* on valves is that, as a liquid, it conforms readily to the shape of the object being coated.

TEMP-COAT® will perform on temperatures to 350° F. *TEMP-COAT®* when applied at proper and recommended thicknesses will perform acceptability even after the inner layer turns medium brown and disbonds.

In High Temperature applications, 350° F and above, surface temperature should be brought down to 350° F (+/-) or lower until a thickness of 60 (+/-) mils (60/1000 of an inch) or greater is achieved. Temperatures greater than 350° F require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction.

On valves that are heated, drying is almost instantaneous. Checking for movement and dryness by touch to assure firmness is an adequate test to allow proceeding with a subsequent coat. If coats are applied too quickly, cracking can occur.

Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT®* should be applied in even thin coats, not to exceed 20 (+/-) mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

Galvanized and ferrous metal surfaces a primer may be required and that product choice should rest with the plant management, customer. **We do not offer recommendations for high heat primers.**

- To begin, mist or brush a very thin film of *TEMP-COAT®* on the clean, dry, scale free surface. This film should be extremely thin and act as an acrylic base for subsequent coats. This first coat, on a hot valve will dry instantly and on a cold valve will cure in 10 to 15 minutes.
- Apply the next coat to approximately a 5 (+/-) mil (5/1000 of an inch) thickness which will fairly well color the pipe. Again it will dry instantly.
- You now have a sufficient base to begin installation at a rate of 20 (+/-) mils (20/1000 of an inch) at a time. Again, on hot valves your work will dry instantly.
- Repeat the process until the desired thickness is achieved. The installation instructions offers a suggested thickness table for average to worst conditions. Less product may be acceptable in well ventilated areas where maximum insulation is not required.

Larger valves expand and contract more when heated to 350° F + giving cause for *TEMP-COAT®* to crack or create a space between the inner surface of *TEMP-COAT®* and the valve or the insulated surface. Temperatures greater than 350° F require the use of a mesh type membrane to assure the products adhesion in the face of extreme expansion and/or contraction.

In order to protect insulation from cracking, several procedures may be used to keep insulation in place and functioning.

- Apply required thickness. When dry, create a sleeve or coat of woven nomex

or fiberglass saturated in TEMP-COAT® as a finished coat.

- Use fiberglass mesh in final coats and center coat creating a strong membrane within the product to support the insulating cast.
- Use chopped shredded fiberglass fibers in the TEMP-COAT® as a fiber binder to keep the product in place around the pipe or item to be insulated.

IT IS IMPORTANT TO NOTE THAT ALL FIBERGLASS MUST BE COVERED COMPLETELY OR THE FIBERGLASS CLOTH WILL ABSORB MOISTURE.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

CONDENSATION – GENERAL – For Surfaces Operating Between 43° F and 100° F.

All surfaces must be clean, dry and free of condensation prior to application of TEMP-COAT®.

Condensation is one of the most expensive problem facing industry today. We are not certain that we have all the answers and the factors which influence condensation create new challenges daily. As of the time of this writing we have resolved every known circumstance leading to chilled based condensation, meaning a supply of chilled air or water making contact through a metal sub-straight with warm air as the opposing force.

In some instances things that appear to be condensation may not be condensation at all but rather a source of moisture affecting a given space which is not properly insulated. Be certain in making a claim that you can repair a problem, that you have first defined that problem.

Common formations of condensation which we work with constantly are condensation:

- Between Pipe and Conventional Insulation.
- On Metal Deck Floors with varying temperatures on ether side of the floor.
- Freon and Oxygen lines.
- Chilled Water Lines, uninsulated.
- Air Conditioning Duct Work.
- Air Vents.

Condensation is a viscous source of Rot and Degradation to Metal. In Naval Vessels and in maritime situations, it breeds illness causing bacteria and harbors rats, roaches and other germ carrying pests. Condensation provides the atmosphere for a catastrophe and the conventional insulation creates the breeding ground for continuing and expanding the problem.

TEMP-COAT® Brand Products not only insulates differently, they also either completely stops condensation or at very least, move the moisture away from the metal surface and causes the moisture to form on the outer surface of our product preventing degradation.

DO NOT FIGURE A JOB TO STOP CONDENSATION UNLESS YOU ADVISE THE CLIENT IT MAY TAKE AS MUCH AS 250 MILS OR MORE (250/1000 INCH) TO RESOLVE THE PROBLEM. 250 mils is roughly a 1/4 inch thickness of product.

On air conditioning duct work we have found that we can do a better job with less product if we can reach into the duct and coat it from the inside. The caution here is that on elbows or on any turns where pressured cold air hits a flat surface and is diverted, must be treated with much more product to stop condensation.

Surface treatment for condensation requires working with heat or cold to stop the formation of moisture long enough to cause *TEMP-COAT®* to adhere to the surface and dry. Most often heat lamps can be used to dry the base coat and when that coat is dry, application of subsequent coats are much easier and faster. Less condensation, less drying time. ALL COATS MUST BE COMPLETELY DRY BEFORE THE NEXT COAT IS APPLIED. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

On Floors or Ceilings and large flat areas, most often a blanket on the opposing surface can adjust the temperatures and stop condensation long enough to apply *TEMP-COAT®*. The same is true for duct work, laying a blanket, cardboard, furniture pad or slab of *TEMP-COAT®* inside of the vent will direct the chilled air away from the surface to be treated and the process of application can begin.

Air conditioning vents can be treated by spraying or applying *TEMP-COAT®* to the back side of the vent regulator creating a barrier between cold and heat hence reducing or resolving the problem.

Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT®* should be applied in even thin coats of 20 (+\-) mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

Thicker coats can be applied but longer drying must be allowed.

Condensation problems are resolved on a trial and error basis. Be certain to allow your bid specification to reflect the need for change in order to beat this problem.

The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information on page 25).

Suggested Applications of Insulated Spaces		
A/C Side	Non A/C Side	Suggested Thickness
70 F	<100 F	40 – 50 mils
60 F	<100 F	50 – 60 mils
50 F	<100 F	60 – 70 mils

Note: Product should be applied thicker where vent outlets blow directly on the surface which is condensing.

All surfaces must be clean, dry and free of condensation prior to application of *TEMP-COAT®*.

BOILERS

TEMP-COAT® is a suitable insulation for boilers and other similar heat gathering and containment vessels.

TEMP-COAT® has been used widely in the *Tire Manufacturing Industry* on molds and in industries which use heat and steam presses. It's function here is to gather more heat, protect personnel and/or cause better operating conditions for production.

Test the surface to determine actual operating conditions prior to installation. Always consult a plant engineer to determine maximum operating temperatures to assure that *TEMP-COAT®* falls within the bounds of fulfilling operating requirements.

On pipes that are heated, drying is almost instantaneous. Checking for movement and dryness by touch to assure firmness is an adequate test to allow proceeding with a subsequent coat. If coats are applied too quickly, cracking can occur.

Choice of Quik-Gun* air assisted spray, airless spray or brush is a matter of space and conditions. *TEMP-COAT®* should be applied in even thin coats, not to exceed 20 (+\-) mils (20/1000 of an inch) allowing to dry thoroughly between coats. ♦♦(see pg 3)

On galvanized and ferrous metal surfaces a primer may be required and that product choice should rest with the plant management, customer. **We do not offer recommendations for high heat primers.**

- To begin, mist or brush a very thin film of *TEMP-COAT®* on the clean, dry, scale free surface. This film should be extremely thin and act as an acrylic base for subsequent coats. This first coat, on a hot boiler will dry instantly and on a cold dry boiler will cure in 10 to 15 minutes.
- You now have a sufficient base to begin installation at a rate of 20 (+\-) mils at a time. Again, on hot boilers your work will dry instantly.
- Repeat the process until the desired thickness is achieved. The installation instructions offers a suggested thickness table for average to worst conditions. Less product may be acceptable in well ventilated areas where maximum insulation is not required.

On larger hot vessels in order to protect the insulation from cracking, several procedures may be used.

- Apply required thickness. When this is achieved and dry, create a sleeve or coat of woven Nomex or fiberglass saturated in *TEMP-COAT®* as a finished coat.
- Use fiberglass mesh in final coats and center coat creating a strong membrane within the product to support the insulating cast.
- Use chopped shredded fiberglass fibers in the *TEMP-COAT®* as a fiber binder to keep the product in place around the boiler or item to be

insulated.

IT IS IMPORTANT TO NOTE THAT ALL FIBERGLASS MUST BE COVERED COMPLETELY OR THE FIBERGLASS CLOTH WILL ABSORB MOISTURE.

TEMP-COAT® does not require jacketing.

TEMP-COAT® may be tinted, using a latex tint, most light to medium colors for color identification.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

PATCH AND REPAIR

One of the more beneficial qualities of *TEMP-COAT®* is in the ability to repair or replace a small section with a small can of product, a stir stick and a paint brush.

TEMP-COAT® Brand Products are created to be very clean and resilient. Repairs are made on *WARM, HOT, OR AMBIENT SURFACES* by cleaning the area to be repaired with a paint scraper, making all necessary repairs, prime and paint in accordance with industry requirements. Replace the *TEMP-COAT®* using a brush, imbedding fiberglass grid if required or as needed into the coating for strength and added protection. Clean tools and equipment with soap and water in an approved wash area.

ON CHILLED PIPES OR ON CONDENSATING SURFACES, level the temperature on the surface to be repaired to stop condensation or use heat source to keep *TEMP-COAT®* in place until completely dry. ♦♦(see pg 3) Each successive application must be completely dry before the next application. ♦♦(see pg 3) Build to the desired thickness then clean up with soap and water in an approved wash area.

Thicker coats can be applied but longer drying must be allowed.

It is a fairly simple matter to pre-fab repair sections by painting *TEMP-COAT®* onto a slick flat surface using fiberglass grid as a support binder. These slabs can be prefabricated to a desired thickness. These slabs can then be cut and used as a pipe wrap or a patch. Application is made by applying *TEMP-COAT®* to the surface requiring the insulation or patch then embedding the slab into the work area and allowing to dry at least 24 hours. This process works well when quick repairs are required and when working in tight spaces.

Note: Dispose of all trash, waste & wash water in accordance with facility instructions.

PERSONNEL PROTECTION

TEMP-COAT® offers an effective, low cost solution to personnel protection by allowing a surface to be coated on the pedestrian side where traffic exists within a facility.

If energy conservation is no an issue a 180° band can be applied to the dangerous face or hot piping, walls, boilers, shields and other apparatus to prevent injury to personnel in the area.

The surface to be coated, preparation above and beyond cleaning, tinting and thickness is to be determined by plant management.

SUPPLY

A

FRIENDLIER

ENVIRONMENT

TEMP-COAT®

YOUR PROBLEM AREAS



Here at Span-World *SAFETY* is extremely important. We know how painful an on-the-job injury can be for personnel and their families, not mention the cost involved.

In our years of working with *TEMP-COAT®*, our customers have reported a world of uses for this product which are too numerous too mention here; but to name a few:

Hot Boat Decks
Steam Pipes
Boilers
Roof Tops
Hot Oil Vats & Tanks
Cross Overs

Oil Rig Roof Tops, Covers & Decks
Oxygen & Nitrogen Lines
Engine Room(s) Ceilings & Walls
Mixing Equipment
Stove Hoods
Air Conditioning & Heating Ducts

All of these uses reduces heat or cold which can cause job related injury or illness and reduce operating costs in the process.

TEMP-COAT® is available in liquid form and in the form of a wrap for tight places.

TEMP-COAT® product can be applied by brush, roller, airless spray or Quik-Gun* air assisted spray and can be tinted for safety, caution or aesthetic purposes.

* The air assisted Quik-Gun eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications. (see Quik-Gun information)

HEAT TRACING – of Water Lines Against Freezing

Frequently potable, well and refined water lines are heat traced and kept in place through all seasons in the event of a winter freeze.

A 30 mil (30/1000 of an inch) thickness of *TEMP-COAT*® applied to water lines will protect pipes to below freezing to –30° F exclusive of wind chill, ice damming and extenuating circumstances. Precautions should be taken to protect pipes and other implements to temperatures well in excess of conditions for your geographical area. Frequently *TEMP-COAT*® serves to replace most or all heat tracing except on extreme north facing or highly exposed areas.

Heat tracing is expensive to maintain and costly to operate where *TEMP-COAT*® is inert and simply provides protection where applicable.

Applied millage must be on clean dry surfaces and to thickness commensurate with the weather patterns in your geographical area.

Since *TEMP-COAT*® requires little or no upkeep there is no last minute rush to assure heat-tracing functions work when an unexpected cold front appears. *TEMP-COAT*® makes heat tracing a secondary back-up procedure rather than a primary insulation procedure giving more time for action if an extremely unusual situation occurs.

HEAT TRACING – Other

Heat tracing is used to a lesser extent in the treatment of piping and vessels that transport or store products which will coagulate due to their nature without regard to freezing. Span-World has had very limited experience in this area and is working on the development of product thickness installation charts which will help guide industry in the use of *TEMP-COAT*® *Brand Products* for this purpose. (9/99)

REMOVAL AND DISPOSAL

Should it be necessary to remove TEMP-COAT® or TEMP-COAT® Type F insulations for repairs or adjustments, the tasks is quite simple.

Heated lines and surfaces, while in operation, can be worked quite easily with a paint scraper or similar apparatus. In dealing with temperatures up to 300°F (+/- 50°) these products are soft and pliable and can be removed without the need for abrasives or heat sources.

On ambient surfaces, TEMP-COAT® can be removed by utilizing sanding discs, grinding wheels or heat can be applied. Removal can be affected with an acceptable heat source and by scraping the heated material.

In all cases, a blanket or cover should be placed under the area being worked to collect the product to be discarded.

Since TEMP-COAT® contains no heavy metals or chlorides (see exhibit A & B) and has a balanced pH of 7-8, there is no need to dispose of this product as hazardous matter. The same applies to dust residue and wash water.

Following repair or fabrication, the affected area can be re-insulated using a brush, roller or spray. The insulation is simply re-applied to the same thickness as the original application, overlapping the old application by one or two inches.

One significant advantage of TEMP-COAT® is that it reduces the cost of material replacement and the labor to install because it generally does not require jacketing or hazardous waste remediation.

The Quik-Gun Air Assisted Spray

Insulating anything just got a lot easier with *TEMP-COAT®* BRAND liquid ceramic insulation and the Quik-Gun™ series of air-assist equipment from TEMP-COAT Brand Products, LLC.

The Quik-Gun™ and *TEMP-COAT®* will change the way you think about insulation. NOW, with one little gun, a small compressor and a bucket of *TEMP-COAT®* anyone can insulate almost anything.

The air assisted Quik-Gun™ eliminates a major portion of over-spray, can get into tighter spaces, is faster and provides a better finish than brush applications.

Use and Operation of the Quik-Gun™:

- Connect Quik-Gun™ to an air compressor (minimum 5 hp with a 20 gallon tank)
- Quik-Gun™ operates at 70 to 80 psi
- Put filler tube in pail of mixed *TEMP-COAT®* and secure to side of pail.
- While holding the Quik-Gun™ at pail level pull trigger and watch *TEMP-COAT®* rise up the filler tube.
- Practice spraying on cardboard or other surface before beginning application. Speed of movement will determine amount of product applied.
- Quik-Gun™ will lose it's prime if raised more than 3 to 4 feet above the pail.
- To clear a clog or prepare to clean the Quik-Gun™, reduce the pressure and place your hand firmly over the tip and quickly pull the trigger. Product will blow back into the pail.
- If gun performance slows down, remove front half of gun from handle and remove dried product from center of pick-up & disbursement block. Continue cleaning with water. Re-assemble and continue to spray.
- Clean thoroughly before stowing the Quik-Gun™.

THANK YOU FOR CHOOSING *TEMP-COAT®* BRAND
PRODUCTS

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Insulating anything just got a lot easier with TEMP-COAT® BRAND liquid ceramic insulation and the QUIK-GUN™ series of air-assist equipment from TEMP-COAT® Brand Products, LLC.

The act of insulating or adding insulation has always been rather difficult, itchy, hard and something you would rather forget about. The fact is with our dwindling energy resources, and growing cost of energy, we must insulate everything we can to conserve energy, stop condensation and protect our lives and property. This thought is as true for the individual as it is for industry, government and everything in-between.

The QUIK-GUN™ AND TEMP-COAT® WILL CHANGE THE WAY YOU THINK ABOUT INSULATION. NOW, WITH ONE LITTLE GUN, A SMALL AIR COMPRESSOR AND A BUCKET OF TEMP-COAT® ANYONE CAN INSULATE ALMOST ANYTHING.

TEMP-COAT® is water soluble therefore it cleans up with soap and water.

TEMP-COAT® can be tinted any light to medium color.

TEMP-COAT® is used just as it comes to you, mixing gently is required and occasional stirring is necessary during spray process.

TEMP-COAT® is sprayed in one even coat. The air assist QUIK-GUN™ causes very little over-spray but the area should be ventilated for your comfort, safety and protection.

TEMP-COAT® can be thinned by adding NO MORE THAN 3oz. of water per gallon.

TEMP-COAT® can be applied at a varied thickness to resolve more difficult thermal problems. Consult can label for added instructions.

TEMP-COAT® can be painted over with flat or semi-gloss latex paint without varying the insulation qualities.

THANK YOU FOR CHOOSING TEMP-COAT® BRAND PRODUCTS

DISTRIBUTED BY: TEMP-COAT Brand Products, LLC 1-800-950-9958

INFO@TEMPCOAT.COM

FAX: (985)-651-2964 WEBSITE [WWW . TEMP-COAT.COM](http://WWW.TEMP-COAT.COM)

QUIK-GUN™ with Pick-up Hose - Suggested Retail \$75.00 plus \$5.25 Shipping in the U.S.A.

QUIK-GUN™ Industrial Kit - Suggested Retail \$185.00 plus \$10.15 Shipping in the U.S.A.

TEMP-COAT® QUIK COAT ONE STEP SYSTEM

QUIK GUN Industrial Kit
Sugg. Retail \$185.00 plus
\$10.15 S/H USA

QUIK AND EASY
ITS JUST THIS SIMPLE

QUIK GUN w//Pick-up
Hose. Sugg. Retail
\$75.00 plus \$5.25 S/H



A SMALL COMPRESSOR
AND THE QUIK GUN
DOES THE JOB @ 80 PSI*



MIX THE PRODUCT
FOLLOWING THE SIMPLE
INSTRUCTIONS



LOAD THE HOSE HOLDING THE
QUIK GUN AT BUCKET LEVEL



HOLDING THE QUIK GUN 14" FROM
THE SURFACE TO BE COATED WILL
PRODUCE A 4" TO 5" PATTERN



HOLDING GUN CLOSER TO THE
SURFACE WILL PRODUCE A
SMALLER PATTERN *



KEEP TEMP-COAT® MIXED
AS YOU SPRAY BY STIRRING
WITH A FLAT STICK OR PADDLE



KEEP THE GUN WITHIN 4'
OF THE TEMP-COAT® BUCKET
TO ASSURE PROPER
PRODUCT APPLICATION .



IF YOU MUST STOP SPRAYING
EMPTY THE GUN AND HOSE AS
INSTRUCTED AND WASH THE
GUN THOROUGHLY WITH FRESH
WATER.



IT'S SO EASY - YOU GET THE PICTURE
PICTURED ABOVE THE QUIK-GUN
INDUSTRIAL KIT

ALWAYS USE PROPER EYE AND BREATHING PROTECTION WHEN USING ANY SPRAY PRODUCT.

• A LITTLE PRACTICE IS NECESSARY TO GAIN A KNOWLEDGE OF THE USE OF THIS SIMPLE SYSTEM.

** PRESSURE MAY VARY WITH SYSTEMS 80 PSI WORKS WELL IN MOST INSTANCES

TEMP-COAT Brand Products, LLC 1-800-950-9958 - WWW. TEMP-COAT. COM - info@TEMPCOAT.COM

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EQUIPMENT TYPES FOR TEMP-COAT® APPLICATIONS

GRACO 7900



GRACO 7900 GAS OPERATED AIRLESS PUMP
THIS IS A MASTIC TYPE PUMP DESIGNED FOR
HEAVY FLUID APPLICATION. SIMILAR
EQUIPMENT MAY BE AVAILABLE FROM OTHER
MANUFACTURERS. USE 18 TO 21/1000 TIPS WITH
#5 OR #6 FAN. THE GRACO PLUS GUN OR
CONTRACTORS GUN WORKS WELL WITH OUR
PRODUCT.

GRACO 33:1 & 41:1 BULLDOG



GRACO 33:1 OR 41:1 AIR OPERATED AIRLESS SPRAY
UNITS AS WELL AS THE OLDER 28:1 UNITS WORK
WELL WITH TEMP-COAT® APPLICATIONS. USE 18 TO
21/1000 TIPS WITH #5 OR #6 FAN. Graco 28:1, 2300 PSI,
3 GPM Airless Pump OR ANY OTHER MANUFACTURERS
PUMP MEETING THESE SPECIFICATIONS SHOULD
PERFORM WELL WITH TEMP-COAT®
(SEE REVERSE SIDE FOR OTHER SPECIFICATIONS)

QUIK GUN™ INDUSTRIAL PAK



The Quik Gun™ industrial pak gives
you a complete set-up for the application of
TEMP-COAT® and other products using
a constant 70 to 80 PSI dry air source.
Easy to use, easy to clean, very few moving
parts. Sprays up to a 3.5" path at 14" from
the surface.

QUIK GUN™ & CAN CLIP



Quik-Gun™ and can clip only.
Just place the clip on the edge of the
container and place the tail of the pick-
up tube 2" above the bottom of the
pail. Hold the gun at bucket height and
squeeze the trigger to prime the gun. Full
Instructions and parts list come with this
equipment. Our product and gun cleans
up with soap and water.

Bulldog 33:1 and 41:1

Pneumatic 2-Ball Piston Pumps

Technical Specifications

	Bulldog 33:1	Bulldog 41:1
Pump ratio	33:1	41:1
Maximum fluid outlet pressure	3300 psi (228 bar, 22.8 MPa)	4100 psi (283 bar, 28.3 MPa)
Maximum air input pressure	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)
Fluid flow @ 60 cpm	2.9 gpm (10.8 lpm)	2.3 gpm (8.7 lpm)
Volume per cycle	6 oz (180 cc)	5 oz (145 cc)
Air consumption @ 100 psi air @ 20 cpm	32 scfm (0.91 m ³ /min.)	32 scfm (0.91 m ³ /min.)
Sound pressure level @100 psi air @ 20 cpm	86 dBA (Quiet Bulldog) 90 dBA (Standard Bulldog)	86 dBA (Quiet Bulldog) 90 dBA (Standard Bulldog)
Air motor inlet	3/4 npsm(f)	3/4 npsm(f)
Pump fluid inlet	1-1/4 npt(m) (Xtreme) 1-1/2 npt(f) (Dura-Flo)	1-1/4 npt(m) (Xtreme) 1-1/2 npt(f) (Dura-Flo)
Pump fluid outlet	3/4 npt(f) 1/2 npt(m) (Xtreme BIF)	3/4 npt(f) 1/2 npt(m) (Xtreme BIF)
Weight	105 lb. (48 kg) (Xtreme) 116 lb. (53 kg) (Xtreme BIF) 86 lb. (39 kg) (Dura-Flo)	105 lb. (48 kg) (Xtreme) 116 lb. (53 kg) (Xtreme BIF) 86 lb. (39 kg) (Dura-Flo)
Instruction manual	309340 (Xtreme) 308418 (Dura-Flo)	309340 (Xtreme) 308350 (Dura-Flo)

Note: BIF indicates Built-In Filter on Xtreme pumps