

Armstrong

ARMASPRAY™

**High-Temperature
Spray-on Insulation**

Armstr

CONTRACTING AN
COR
LANCASTER, PENNS

Armstrong INSULATIONS

Armstrong ARMASPRAY

High Temperature
Spray-on
Insulation

DESCRIPTION

Armaspray is a blend of mineral wool fibers, asbestos fibers and inorganic binders. The process and equipment used in preparation of the mineral wool is covered by U. S. Patent 3,222,924. This highly refined mineral wool assures optimum physical characteristics of the end product.

The product is processed from 50 lb. bags of dry material - at the job site - through the special Armaspray Spraying Machine.

The Armaspray is dampened in mid-air by atomized water as it leaves the spray gun. The distance between gun and surface being insulated is approximately 20". The semi-plastic material is then pressed or tamped with wooden or metal tools to produce a smooth surface and a monolithic coating.

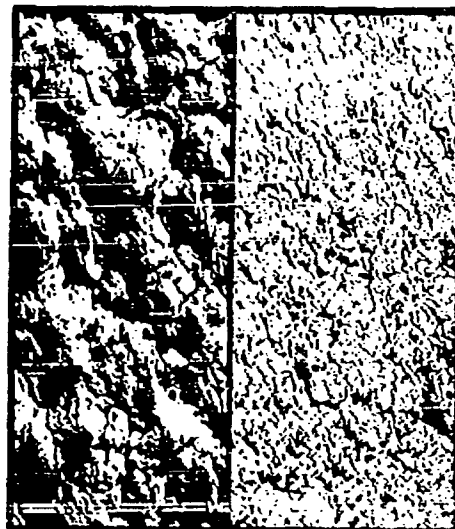
Job-site requirements for the spray equipment is 230 volt single phase 35 amp electricity and a minimum of two gallons of water per minute.

USES

Armaspray is designed for use either indoors or outdoors from ambient temperatures to 1600° F. (Hot Face). It can be used on all equipment requiring high temperature insulation and piping with a minimum diameter of 14". It can also be used for the insulation of boiler room ceilings and metal buildings.

SPECIFICATION COMPLIANCE

There are no government specifications applicable to this material.



Bulk Material

Finished Surface

PHYSICAL PROPERTIES

Density (after spraying and drying), 10 - 12 lbs./cu.ft. avg.
Thermal conductivity, Btu-in./ft.²-hr.-° F.

at 200° F. mean temperature	.34
at 400° F. mean temperature	.43
at 600° F. mean temperature	.57
at 800° F. mean temperature	.77

Chloride content, 20 p.p.m.

ADVANTAGES

HAND LABOR - No cutting, fitting, pointing or leveling coats of cement. Fast application, mechanized process saves time and labor.

THICKNESS - Any economical thickness in one layer.

JOINTS - None, hence greater thermal efficiency.

SUPPORT - Less mechanical support required than for conventional materials.

FINISHES - OUTDOOR - Any conventional weatherproofing finish.

INDOOR - No finish required where there is no mechanical abuse.

FIRE HAZARD - Completely incombustible.

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Armstrong CONTRACTING AND SUPPLY CORPORATION
LANCASTER, PENNSYLVANIA

ARMASPRAY

High-Temperature Spray-on Insulation



Product Description

Armaspray is a blend of mineral wool fibers, asbestos fibers and inorganic binders. The process and equipment used in preparation of the mineral wool is covered by U. S. Patent 3,222,924. This highly refined mineral wool assures optimum physical characteristics of the end product. The product is processed from 50 lb. bales of dry material at the job site—through the special Armaspray Spraying Machine.

Uses

Armaspray is designed for use either indoors or outdoors from ambient temperatures to 1600° F. (hot face). It can be used on all equipment requiring high temperature insulation and large diameter piping. It can also be used for the insulation of boiler room ceilings and metal buildings. Additionally, Armaspray applications simultaneously provide the protection, noise reduction and corrosion protection, making it an ideal material for varied industrial uses.

Advantages

Because Armaspray is not petroleum based, it is self-extinguishing. It provides excellent adhesion—on site—it automatically provides certain advantages over conventional insulating materials. For example, double layer work is eliminated as well as culling, fitting and polishing. Because the process of insulating is mechanized, greater pro-

Comparative Features

	ARMASPRAY	BLOCKS	BLANKETS	CEMENT
Good "K" Factor	X	X	X	X
Fast Application for large areas	X	X	X	X
No culling or fitting	X	X	X	X
Any thickness in one layer	X	X	X	X
Clean	X	X	X	X
Perfect line contact on all shapes	X	X	X	X
Minimum reinforcement	X	X	X	X
Easy patched	X	X	X	X
Resistance to vibration	X	X	X	X
No joints	X	X	X	X
Machine applied	X	X	X	X

Finishes

All conventional types of insulation finishes are compatible with and will perform satisfactorily over Armaspray. Depending on service conditions and customer preference, the most common of these are mastics, plastics, corrugated aluminum and hard cement finishes. Depending on conditions, Armaspray, when applied indoors, may be left in its natural state. Because Armaspray is sprayed with water, it is advisable that all mastic and plastic types of finishes have a high permeability rating. Where the Armaspray has been sealed from rain water or other moisture source, it is advisable to allow the material to dry naturally or to accelerate drying by turning the heat on before the weatherproof finish is applied. The natural drying rate is shown under Physical Characteristics.

Customer Service

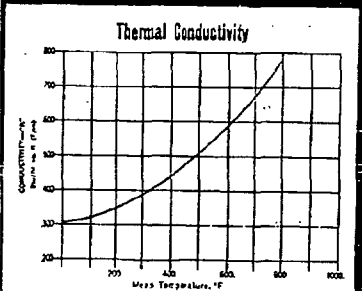
Armstrong has highly skilled, trained men to install Armaspray using the special patented equipment. Specifications, technical service, backed by extensive practical experience, and quotations are available from all Armstrong offices throughout the United States as listed on the back page of this folder.

Physical Characteristics

Maximum Service Temperature	1600° F.
Fusion Temperature	2300° F.
Fired Shrinkage	1200° F. 24 hrs. soak, 1.0% liner change, 1.8% thickness change
Density (after shaping and drying)	10 to 12 lbs./cu. ft.
Thermal Conductivity (ASTM C-182-47 & C-154)	0.34 Btu/hr. sq. ft. (F/in.) @ 200
	0.43 Btu/hr. sq. ft. (F/in.) @ 500
Compressive Strength (ASTM C-157)	5 to 10 psi (25% compression) @ 10 to 12 lbs./cu. ft.
Specific Heat (ASTM C-351)	21 Btu/lb. °F.
Chloride Content	20 p.p.m.
Pyroscopicity	1.5% gain in weight after drying to constant weight. Then exposed to air at 70° F. and 90% R.H. for 14 days.
Drying	24 hours at 73.4° F., 50% R.H. 2' of air per minute. (Sample 1.5" thick.)
Curing	Reaches 90% of ultimate strength in seven days.
Setting Time	2 to 3 hours, depending on ambient conditions.
Combustibility	Completely incombustible.
Corrosion	Does not contribute to the corrosion of steel.
Resistance to Solvents	Completely resistant to all solvents.
Resistance to Acids	Good.
Resistance to Alkali	Good.

ARMASPRAY

High-Temperature Spray-on Insulation



HEAT TRANSMISSION AND SURFACE TEMPERATURES
FOR FLAT AND LARGE DIAMETER SURFACES

Form 17, 1964 Edition. For use with Armstrong's ARMA-SPRAY.

T ₁		T ₂		T ₃		T ₄		T ₅		T ₆		T ₇		T ₈		T ₉		T ₁₀		T ₁₁		T ₁₂		T ₁₃		T ₁₄		T ₁₅		T ₁₆		T ₁₇		T ₁₈		T ₁₉		T ₂₀		T ₂₁		T ₂₂		T ₂₃		T ₂₄		T ₂₅		T ₂₆		T ₂₇		T ₂₈		T ₂₉		T ₃₀		T ₃₁		T ₃₂		T ₃₃		T ₃₄		T ₃₅		T ₃₆		T ₃₇		T ₃₈		T ₃₉		T ₄₀		T ₄₁		T ₄₂		T ₄₃		T ₄₄		T ₄₅		T ₄₆		T ₄₇		T ₄₈		T ₄₉		T ₅₀	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

OFFICE LOCATIONS

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Armstrong

CONTRACTING AND SUPPLY
CORPORATION
LANCASTER, PENNA.
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High-Temperature
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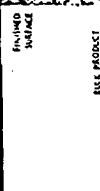
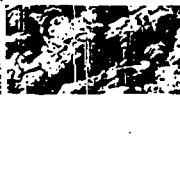
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FINISHED SURFACE



ARMASPRAY 16

ARMASPRAY 16

High-Temperature Spray-on Insulation

Product Description

Armaspray 16 is a blend of mineral wool fibers, asbestos fibers and inorganic binders. The process and equipment used in preparation of the mineral wool is covered by U. S. Patent 3,222,924. This highly refined mineral wool assures optimum physical characteristics of the end product. The product is processed from 50 lb. bales of compressed dry material—at the job site—through the special Armaspray Spraying Machine.

Uses

The Armaspray 16 is dampened in cold air by atomized water as it leaves the spray gun. The distance between gun and surface being insulated is approximately 16". The semi-plastic material is then pressed or tamped with wooden or metal tools to produce a smooth surface and a monolithic coating. Job site requirements for the spray equipment are 230 volt single phase 35 amp electricity and a minimum of two gallons of water per minute.

Advantages

Because Armaspray 16 is not preformed, but sprayed-on site—it automatically provides certain advantages over conventional insulating materials. For example, double layer work is eliminated as well as cutting, fitting and pooling. Because the process of insulating is mechanized, greater production is realized, hence lower costs. Additionally, hoisting is eliminated because the Armaspray 16 machine will pump the material through flexible hoses to the application point. The table on the following page compares its features with other conventional types of insulation.

Uses

Armaspray 16 is designed for use either indoors or outdoors from ambient temperatures to 1600° F. (Hot Face). It can be used on all equipment and large diameter piping requiring high temperature insulation. Additionally Armaspray 16 applications simultaneously provide fire protection, noise reduction and corrosion prevention, making it an ideal material for varied industrial uses.

Comparative Features

	ARMASPRAY 16	BLOCKS	BLANKETS	CEMENT
Good "R" Factor	X	X	X	X
Fast Application for large areas	X	X	X	X
No cutting or fitting	X	X	X	X
Any thickness in one layer	X	X	X	X
Clean	X	X	X	X
Perfect face contact on all shapes	X	X	X	X
Minimum reinforcement	X	X	X	X
Easily patched	X	X	X	X
Resistant to vibration	X	X	X	X
No joints	X	X	X	X
Machine applied	X	X	X	X

Physical Characteristics

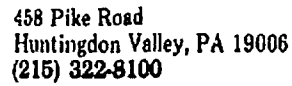
Minimum Service Temperature (ASTM C 411-41)	-200° F.
Maximum Service Temperature (ASTM C 122-47)	1600° F. (Hot Face)
Thermal Conductivity (ASTM C 331-41)	0.34 Btu/in. sq. ft. (1 in.) @ 200° F. 0.44 Btu/in. sq. ft. (1 in.) @ 1200° F.
Compressive Strength (ASTM C 48-54)	7 to 12 psi (25% compression) @ 100° F. to 1400° F.
Specific Heat (ASTM C 331-41)	0.25 Btu/lb. ° F. (Average)
Thermal Expansion (ASTM C 331-41)	1.5% gain in length after drying to produce finish.
Moisture Content, Max.	Then exposed to air at 70° F. and 50% R.H. for 14 days, Residual Moisture Content, Max. 1.5%.
Drying	24 hours @ 75° F. to 100° F. (Average)
Setting Time	1 to 2 hours (Average)
Combustibility	Non-combustible (ASTM E 136)

Finishes

Most conventional types of insulation finishes are compatible with and will perform satisfactorily over Armaspray 16. Depending on service conditions and customer preference, the most common of these are asbestos, plastics, coated aluminum pitting and hard cement finishes. Depending on conditions, Armaspray 16, when applied in layers, may be left in its natural state. Because Armaspray 16 is

Customer Service

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Spec. 7065

The following records are hereinafter microfilmed for preservation, relating to substitution of microfilm for the original record in the interest of economy and conservation of space, in accordance with the Uniform Photographic Copies of Business and Public Records As Evidence Act.

RECORD DESCRIPTION	BEGINNING	ENDING
Brochures	Amstrong Contracting & Supply	

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