

ALTENE®
TECHNOLOGIES

**THE HIGH QUALITY ANTI-CORROSION
COATING SYSTEMS FOR PIPELINES,
FOR GAS, WATER AND OIL**



THE HIGH QUALITY ANTI-CORROSION COATING SYSTEMS FOR UNDERGROUND PIPELINES DIRECTLY APPLICABLE "IN LINE" OVER THE DITCH OR "IN PLANT"

Since early in the seventies, ALTA developed a series of solutions aimed to meet the most sophisticated requirements of its customers in the field of anti-corrosion coatings for gas, water and oil pipelines of any diameter.

With more than thirty years of experience in this field, ALTA has earned today the qualification to propose a wide range of ALTENE systems, suitable to all kind of ground and operating conditions.

ALTENE systems are formed by the best combination between primer, anti-corrosion coating tapes (inners) and mechanical coating tapes (outers). Besides "inner-outer" systems ALTA developed "monotapes" for particular uses such as repair of coating of pipelines and coating of valves and pipe fittings.

The ALTENE corrosion protection systems are satisfactorily used by the most important oil, gas and water companies both for the coating of new pipes as well as "re-vamping" of the existing pipes during in service maintenance.

The ALTENE corrosion protection systems also offer economical and flexible solution for the protection of welding joints and for the coating of underground tanks.

The polymeric composition of the tapes forming the ALTENE systems and their "cold" application ensure a "clean" product. In other words, the ALTENE systems are friendly for the environment and safe for the human health, and at the same time they offer better quality when compared to the bituminous based systems.

The ALTENE corrosion protection systems have been accepted and recognized after having passed the strictest standards of the control institutes worldwide. The ALTENE corrosion protection systems have been recognized for their high quality, proven long-term declaration, ease of application - both manually and mechanically- and their operation under extreme operating conditions.

ALTENE corrosion protection systems are at the vanguard on the worldwide market and meet the requirements of all customers.



IN PLANT COATING SYSTEMS

Altene System	Colour			Solids Content %	Thickness		Recommended Overlap	Coating Thickness mm	Max operating temperature °C	Test Methods	Other available Thicknesses mils	Properties and Use
	Adhesion Promoter	Anti-corrosion Tape	Mechanical Protection Tape		mil	mm						
P19 100-20 205-30 206-30	black	black	grey or black white	19	20 30 30	0,508 0,762 0,762	1"	2,032	+60°C	ASTM D 1000 ANSI-AWWA C214-95	15-18-25-30-40 15-20-25	High anti-corrosion protection, excellent mechanical resistance. Particularly suitable for new water pipelines.
⁽¹⁾ P16 122-30 122-30	black	black	white	20	30 30	0,762 0,762	50 %	3,048	+80°C	ASTM D1000 DIN EN 12068	20- 25S 20- 25S	High anti-corrosion protection, high shear resistance, high U.V. resistance. Suitable for medium-large diameter pipelines for the transportation of all fluids.
⁽²⁾ P16 HT TP 1823-32 122-20	black	black black	white	20	32 20	0,813 0,508	50 %	2,641	+80°C	ASTM D1000 DIN EN 12068	35 20-25S	High anti-corrosion protection, excellent shear resistance, high U.V. resistance, high resistance to cathodic disbondment. The biadhesive anti-corrosion tape ensures a strong adhesion between the layers. Suitable for small-medium diameter pipelines for the transportation of all fluids.
1-2 Systems homologated by DVGW according to DIN EN-12068 standard												
For further information regarding systems or products and in case of specific projects please contact the ALTA ALTENE technical service												



Water pipe (Acqueduct) diam 1600 mm.
 Altene Rp2 plant system

IN PLANT COATINGS

ALTENE systems ensure maximum guarantee of coating because they confer strong adhesion to the metal and to themselves and high strong resistance to the cathodic disbondment.

The properties of the polyolefin backing of ALTENE systems, beside the high conformability, provide a high mechanical resistance, which allows to apply a strong tension during their application, resulting in a tenacious and homogeneous coating.

ALTENE systems ensure a long term performance of coating, thanks to the high electrical and chemical resistance to both acids and alkalis attacks and thanks to their high mechanical properties, which protect the pipe from damages during the transportation and the installation.

ALTENE systems ensure a high economical advantage because they match the highest productivity with very low investments and produce a minimum waste. These systems can be applied in all environmental working temperatures, and thanks to their flexibility they are continuously adaptable to the different ground conditions.

ALTENE systems ensure the protection of the environment and the human health thanks to the stability of their components and to their non-polluting nature.

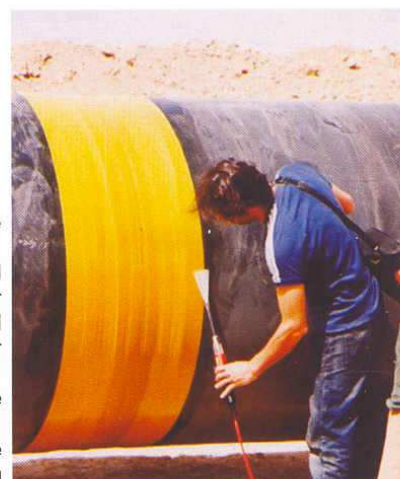
JOINTS

ALTENE systems ensure the greatest anti-corrosion protection of welding joints on the pipelines, because they exclude every possibility of blisters and humidity formation between the metal and the tapes.

ALTENE system are "cold" applied under prevailing environmental temperatures of the products and the surface, thus allowing operation without the inconveniences associated with inadequate or excessive pre and/or post heating, which often jeopardize the whole quality of the "hot" applied coating (thermo-shrinking, thermo-setting products, etc.), often connected with dangerous or unhealthy working conditions.

ALTENE systems ensure long life of the coating during the time, thanks to the stability and resistance of their components to the electrical, chemical, biological and mechanical attacks.

ALTENE systems ensure a quick and efficient application of the coating tapes, regardless of the morphology and orography ground conditions, the types of pipelines used and the prevailing environmental temperatures.



SYSTEMS FOR THE COATING OF JOINTS^(J), ELBOWS^(E), FLANGES^(F), VALVES^(V) AND SPECIAL PIPELINES^(SP)

Altene System	Colour			Solids Content %	Thickness		Recommended Overlap	Coating Thickness mm	Max Operating Temperature °C	Test Methods	Other available Thicknesses mills			Properties and Use
	Adhesion Promoter	Anti-corrosion Tape	Mechanical Protection Tape		mills	mm								
J-E-SP	← use →										J-E-SP	J-E	J-E	High anti-corrosion protection, high adhesion, excellent conformability. Particularly suitable for joints, elbows of new pipelines, or pipelines to be repaired, coated with bytumen or coaltar, designed for transportation of fluids at low temperatures.
P 25 310-35	black			27	35	0,889	50%	1,78	+50°C	ASTM D 1000 ANSI AWWA C 209	40	50	60	
J-E-SP-F-V	← use →										J-E	J-E	J-E	High anti-corrosion protection, high adhesion, excellent conformability. Particularly suitable for joints, elbows of new pipelines, special parts easy to be coated.
P 27 300-25 205-15	black			27	25 15	0,635 0,381	50%	2,032	+60°C	ASTM D 1000	35 15	40 15	50 15	
J-E	← use →										J-E			High anti-corrosion protection, high resistance to continuous operating temperatures, high shear resistance, high resistance to cathodic disbondment.
P 16HT 122-25 BHT 122-25 BHT	black			20	25 25	0,635 0,635	50%	0,254	+100°C	ASTM D1000	30 BHT 30 BHT			
J-E-F-V	← use →										J-E			High anti-corrosion protection, high and immediate adhesion, excellent conformability, high U.V. resistance. Particularly suitable for joints, elbows, where mechanical protection is not required.
P 27 340-40	black			27	40	1,016	50%	2,032	+60°C	ASTM D1000	35			
J-E-SP	← use →										J-E	J-E		High anti-corrosion protection, high shear resistance, high U.V. resistance.
P 16 122-20 122-20	black			20	20 20	0,508 0,508	50%	2,032	+80°C	ASTM D1000 DIN EN 12068	25 S 25 S	30 30		
J-E-SP	← use →										J-E-SP	J-E-SP		High anti-corrosion protection, high shear resistance, high U.V. resistance, high resistance to cathodic disbondment, the biadhesive anti-corrosion tape ensures high adhesion between the layers.
⁽¹⁾ P 16 TP1822-20 122-20	black			20	20 20	0,508 0,508	50%	2,032	+80°C	ASTM D1000 DIN EN 12068	25 S 25 S	30 30		
J-E-SP	← use →													High anti-corrosion protection, excellent shear resistance, high U.V. resistance, high resistance to cathodic disbondment, the biadhesive anti-corrosion tape ensures high adhesion between the layers.
⁽²⁾ P 16 HT TP1823-32	black			20	32	0,8128	4 layers	3,25	+80°C	ASTM D1000 DIN EN 12068				
J-E	← use →													High anti-corrosion protection, high shear resistance, high resistance to high operating temperature.
P 327 395-30	black			27	30	0,762	4 layers	3,048	+121°C	ASTM D1000				

1-2 Systems homologated by DVGW according to DIN EN-12068 standard

For further information regarding systems or products and in case of specific projects please contact the ALTA ALTENE technical service

"IN LINE" COATING SYSTEMS OF NEW PIPELINES, RE-VAMPING AND RE-CONDITIONING OF EXISTING COATINGS



"IN LINE" COATINGS RE-VAMPING AND RE-CONDITIONING

ALTENE systems ensure an easy and fast coating application during "in service maintenance" of the pipes when the original coating is being restored.

ALTENE systems ensure an extremely advantageous "cost-benefit" comparison because they match a fast and accurate work with very low investments.

ALTENE systems ensure the restoration of the coating protection at the highest level, regardless of the morphological ground conditions, the diameters and the lengths of the pipes and the coating protection system previously used.

ALTENE systems ensure the long life of the coating protection during the time, thanks to the stability and resistance of their components to electrical, chemical and mechanical attacks.

Altene System	Colour			Solids Content %	Thickness		Recommended Overlap	Coating Thickness mm	Max Operating Temperature °C	Test Methods	Other available Thicknesses mills	Properties and Use
	Adhesion Promoter	Anti-corrosion Tape	Mechanical Protection Tape		mil	mm						
P 25 310-40	black			27								High anti-corrosion protection. Particularly suitable for re-vamping and re-conditioning of existing pipelines, previously coated with bitumen or coaltar. It can also be used in combination with mechanical protection tape 205..., on request
		black			40	1,016	50%	2,032	+40°C	ASTM D 1000	35-50-60-65-70	
P 19 109-25 205-25	black	black	black or white	19	25	0,635	50%	2,54	+60°C	ASTM D 1000	15-20-30-40-50-60 15-20-25	High anti-corrosion protection, excellent mechanical resistance. Particularly suitable for new pipelines and for pipelines to be re-conditioned. It can be used in combination with all the existing coatings.
					25	0,635						
P16 122-25 210-25	black	black	black	20	25	0,635	50%	2,54	+60°C	ASTM D 1000 GOST - STANDARD		High anti-corrosion protection, excellent mechanical resistance. Particularly suitable for new pipelines and for pipelines to be re-conditioned. It can be used in combination with all the existing coatings and in all the climatic conditions.
					25	0,635						
P16 122-25 S 122-25 S	black	black	white	20	25	0,635	50%	2,54	+80°C	ASTM D1000 DIN EN 12068	20 -30 20-30	High anti-corrosion protection, high shear resistance, high U.V. resistance. Suitable for the transportation of all fluids, and in particular for new pipelines.
					25	0,635						
⁽¹⁾ P16 HT TP 1822-25 122-25 S	black		black black white	20	25	0,635	50%	2,54	+80°C	ASTM D1000 DIN EN 12068	20-30 20-30	High anti-corrosion protection, excellent shear resistance, high U.V. resistance, high resistance to cathodic disbondment, the biadhesive anti-corrosion tape ensure high adhesion between the layers. Suitable for the transportation of all fluids, in particular for pipelines to be reconditioned. Highly compatible with all the existing coatings.
					25	0,635						

1 System homologated by DVGW according to DIN EN-12068 standard

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SPECIAL SYSTEMS



ALTENE MONOTAPE SYSTEMS

With the "Monotape" name, Alta Altene presents a series of high technical products. They have been designed based on the long experience and the information received from the designers and the end users, aimed to obtain a single product which contains all the technical characteristics necessary to ensure a homogeneous and high quality coating in all the environmental and climatic conditions, in accordance with the strictest international standards. For this reason, inside the composition of **ALTENE Monotape system**, besides Primer, there is only one tape. Each **Monotape** has been studied to ensure the greatest performances, adhesion, plasticity, cathodic, mechanical and dielectric resistance, according to each specific need.

The **ALTENE Monotape Systems**, opportunely chosen, allow to facilitate the activities on the plant, make easier the operation of the workers and guarantee a perfect homogeneity of the coating.

HIGH TEMPERATURE ALTENE SYSTEMS

HIGH TEMPERATURE ALTENE Systems have been designed to ensure an excellent anti-corrosion protection on pipelines with high conditions of continuous operating temperature, keeping their typical cold-application.

HIGH TEMPERATURE ALTENE Systems ensure the duration of the coating protection thanks to the special polymers, rubbers and additives by which their backing and adhesives are formed of. They guarantee the performance during the time of the anti-corrosion protection and assure excellent impact, penetration and shear resistance.

ALTENE THREE-PLY SYSTEMS

ALTENE Three-ply Systems ensure innovative technical characteristic thanks to the blend of the special polymers they are formed of.

ALTENE Three-ply Systems ensure a matchless degree of anti-corrosion coating thanks to their adhesion and sealing-effect both on the metal walls and on surfaces and on the tapes composing the system.

ALTENE three-ply ensures today the satisfaction of the quality requirements which will come to light tomorrow.



Altene System	Colour			Solids Content %	Thickness		Recommended Overlap	Coating Thickness mm	Max Operating Temperature °C	Test Methods	Properties and Use
	Adhesion Promoter	Anti-corrosion Tape	Mechanical Protection Tape		mil	mm					
P25 PV2005-60 PV 2060-11	black	black	white	27	60 11	1,524 0,2794	1 " 55 %	2,082	+ 50 °C	ASTM D1000	High anti-corrosion protection, high mechanical and U.V. resistance. Tapes with a special backing composed of PVC, polyvinyl and polyolefine. Particularly suitable for cast iron pipes and for water transportation
P16HT 122-25 HT 210-25 HT	black	black	black	20	25 25	0,635 0,635	50%	2,54	+ 92 °C	ASTM D1000 DIN EN 12068	High anti-corrosion protection, excellent shear resistance, high U.V. resistance. Suitable for the transportation of all fluids, and in particular for new pipelines.
P16HT 122-25 BHT 210-25 HT	black	black	black	20	25 25	0,635 0,635	50%	2,54	+100 °C	ASTM D 1000 GOST -STANDARD	High anti-corrosion protection, excellent shear resistance, high U.V. resistance. Suitable for the transportation of all fluids and in particular for new pipelines.
P16HT TP1822-30 BHT 122-30 HT	black	black	white	20	30 30	0,762 0,762	50%	3,04	+92 °C	ASTM D1000 DIN EN 12068	High anti-corrosion protection, excellent shear resistance, high U.V. resistance. Suitable for the transportation of all fluids and in particular for new pipelines.
P319 395-25 207-20	black	black	white	19	25 20	0,635 0,508	50%	2,28	+121 °C	ASTM D1000 DIN EN 12068	High anti-corrosion protection, excellent shear resistance, high U.V. resistance. Suitable for the transportation of all fluids and in particular for new pipelines.
⁽¹⁾ P16 TP 1822-50 TP1823-20	black		black black yellow black	20	50 20	1,27 0,508	50%	3,55	+80°C	ASTM D1000 DIN EN 12068	High anti-corrosion protection, high resistance to cathodic disbondment, high shear resistance, high U.V. resistance, the biadhesive anti-corrosion tape ensures high adhesion between the layers. Suitable for the transportation of all fluids, in particular on pipelines to be reconditioned, compatible with all the existing coatings.
⁽²⁾ P16 TP 1822-50 TP1823-32	black		black black yellow black	20	50 32	1,27 0,8128	50%	4,16	+80°C	ASTM D1000 DIN EN 12068	High anti-corrosion protection, high shear resistance, high U.V. resistance, high resistance to cathodic disbondment, the biadhesive anti-corrosion tape ensures high adhesion between the layers. Suitable for the transportation of all fluids, in particular on pipelines to be reconditioned, compatible with all the existing coatings.

1-2 Systems homologated by DVGW according to DIN EN-12068 standards

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SPECIAL PRODUCTS

PRODUCTS series	Colour	Standard Thicknesses mills mm	Use
330	black	30-40 - 60 0,762 - 1,016 - 1,524	Tape with primer integrated. Specific for areas where high polluting atmospheric agents are present, or where the presence of solvents or vapors is forbidden
394	black	30-40 - 60-70 0,762 - 1,016 - 1,524 - 1,778	Tape with a polypropylene compound backing. Designed for all the applications. High and immediate adhesion and excellent conformability. Particularly suitable for repairs or where an immediate backfilling after coating is required
3100	black or grey	78 1,9812	Mastic tape reinforced with a plastic grid. Particularly suitable for re-conditionings. High adhesion and high shear resistance
AL4	aluminium	30 0,762	Tape with aluminium backing, to be used as a final protection for the anticorrosion tapes applied on above ground pipelines, high U.V. and atmospheric agents resistance
PV 2005	black white blue	42-45 - 50 -55- 60-65 1,06-1,14-1,27-1,40-1,52-1,65	Tape with a PVC, polyvinyl and polyolefin backing. High impact and penetration resistance. Recommended for general coatings and particularly suitable on concrete weighted surfaces.
PV 2005... H	black	50-60-65 1,27-1,52-1,65	Tape with a PVC, polyvinyl and polyolefin backing. High impact and penetration resistance. Recommended for general coatings to be hand applied
320	black. White, blu and yellow on request	30-35-40-50-65 0,762-0,889-1,06-1,27-1,65	Highly plastic and conformable tape to the part to be coated, high and immediate adhesion. It can be used in combination with Altene mastics and P27 primer. Particularly suitable for coating of valves, flanges and irregular shaped objects

MASTICS

PRODUCT series	Colour	Density g/cm³ packaging	Use
MN		~ 1,6 band 3 x 40 mm 25 mt long	Ideal for profiling around irregular shaped objects
MN 1000		~ 1,3 5 and 25 kg bucket	Ideal for filling large voids


GENERAL UTILITY PRODUCTS

PRODUCTS series	Colour	Standard Thicknesses mills mm	Use
400	black white yellow	10 -12 0,260 - 0,305	Plastic tape for general uses, in particular for coating of small-diameter pipelines where a particular conformability is required.
500	black white yellow	11 -13 0,280 - 0,330	Tape for general use, in particular for the coating of small-diameter pipelines, where a good mechanical resistance is required
TP 1822.15TB	black black	15 0,381	Plastic tape for girth welding joints of pipelines with medium-high operating temperatures, or coating of irregular shaped objects
300	black	15 0,381	Plastic tape for girth welding joints of pipelines with normal operating temperatures, or coating of irregular shaped objects
NE 301	black	35 0,89	Elastic tape for girth welding joints of pipelines with medium-high operating temperatures, or coating of irregular shaped objects
Gas Tape	yellow	40 micron 0,04	Marking tape for pipe, bearing the name of the fluid contained inside the pipe.
200	black	10-15-20 0,25-0,38-0,50	Polyethylene tape with excellent mechanical properties. Used as a rock-shield

PRIMER

PRODUCTS series	Colour	Solids Content % flash point °C	Use
P19	black	19 -12 (+ 4)	Adhesion promoter, suitable for machine applications on new pipelines or smooth surfaces. Offered with a very low V.O.C or V.O.C. free
P 16	black	20 -12(+4+24)	Adhesion promoter, suitable for machine or hand applications at medium-high temperatures. High shear resistance
P16HT	black	20 -12 (+24)	Adhesion promoter, suitable for machine or roll applications at medium-high temperatures. Excellent shear resistance
P25	black	27 -12 (+24)	Adhesion promoter. It can be applied by spray or roll in combination with bitumen-based Altene inner-tape.
P27	black	27 -12 (+24)	Adhesion promoter. Particularly suitable for applications by roll on re-vamping and on irregular shaped objects. Offered with low V.O.C and V.O.C. free
P319	black	19 -12	Adhesion promoter, suitable for machine application at highest temperatures on new pipelines or smooth surfaces.
P327	black	27 -12	Adhesion promoter, suitable for application by roll at highest temperatures on new pipelines or irregular shaped objects

MODEL	SERIES	APPLICATION LOADING	WRAPPING MACHINES Use	ROLL SIZE WIDTH DIAMETER	CORE	STRUCTURE
R	JOLLY	HAND OPERATED SIDE WITH SHOULDER OPENING	Wrapping machine particularly versatile. Suitable for coating small quantities of various-diameter pipes with medium dimensions (from 6" to 12") in particular in line	from 2" to 9" 220	41-76,2	SIDE LOADING CHARRIOT
GG 41 - GG 76	GG	HAND OPERATED SIDE	Wrapping machine with excellent performances to be used in line, over the ditch or in plant, in case of rotating pipes, for coating small-diameter pipelines and joints (from 2" to 12")	from 2" to 4" 170	41-76,2	SIDE LOADING CHARRIOT
EMT6	CWI	HAND OPERATED SIDE	Wrapping machine with excellent performances to be used in line or over the ditch, for coating medium-diameter pipelines (from 10" to 14") and all kind of joints equal or bigger than 12"	from 4" to 6" 220	76,2	SIDE LOADING CHARRIOT
A1-A2-A3-A4 A5-A6	AVT	HAND OPERATED SIDE	Wrapping machine with excellent performances, to be used in line or in plant for coating straight pipelines with a diameter from 4" to 60" for large projects. Motorized A3 series machines are available on request	from 4" to 9" 310	76,2	ROTATING HALF-RING WITH HINGE LOCK DEVICE
AS10-AS20- AS30 A15-AS2	AVT/S	HAND OPERATED SIDE	Wrapping machine with excellent performances, to be used in line or in plant for coating straight pipelines with a diameter from 2" to 14" for large projects and where it is necessary to contain the dimension of the ditch	from 4" to 6" 310	76,2	ROTATING HALF-RING WITH HINGE LOCK DEVICE
Multimatic	AVT/M	N.A. N.A.	Machine for the removal of the existing coating	N.A. N.A.	N.A.	ROTATING RING


 AVT Series Mod. A..
 Wrapping Machine

CWI series Mod EMT6



ALTA is recognized worldwide as a leading company in the production of corrosion protection coatings for gas, water and oil pipes. Founded in 1973 from a co-operation between ENI Group and the most advanced American technology, ALTA faced and solved during the years the most demanding problems related to the realization of coating application of pipelines of worldwide prominence, the methane pipeline Algeria-Italy and the re-building of most important lines of Russia federation, thus attaining excellent technical results and the satisfaction of all its customers. The evolution of the production technology of ALTA is based on the philosophy of a continuous improvement, thanks to an ongoing commitment in investing in R&D in its testing labs at Bagnoregio. For more than thirty years ALTA and ALTENE products are on a worldwide scale synonymous of advanced technological solutions due to their reliability and flexibility.



Purchased by SIMA Group in 1996 ALTA develops within the boundaries of the Group, strong technological and productive synergies. In 2006 SIMA Group transfers know-how, plants, products, trademarks and patents to ALTA ALTENE.

ALTA ALTENE main purpose is to grow further the reputation gained during the years and continue the development to the process of quality, to meet the constantly changing market requirements.

To choose ALTA ALTENE means to decide to have a partner sensitive to the changing requirements of the market and keeping constantly in step with the technological evolution.

ALTA PRODUCTION TAKES PLACE IN AN ENVIRONMENT UNDER TOTAL QUALITY CONTROL.

ALTA ALTENE srl - ANTICORROSION SYSTEMS FOR PIPELINES AND INDUSTRIAL PLANTS

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