

MATERIAL DATA SHEET
AP30545 SMLS CS PIPES
PIPES

PRODUCT	STANDARD	GRADE	CERTIFICATE
Coated seamless carbon Steel pipes	ASTM A106M	B	EN 10204 TYPE 3,1

DIMENSIONS	ENDS (up to 1" incl.)	ENDS (above 2" incl.)	ENDS PROTECTION
ACC. TO ASME B 36.10/ B 36.10M	plain end, square cut	ASME B 16.25 fig.2a/3a	PLASTIC CAPS PLUGS

CHEMICAL REQUIREMENTS (ladle analysis)

Coated seamless carbon steel pipes will be delivery with chemical composition in compliance with Table 1

TABLE 1 Chemical Requirements

	Composition, %		
	Grade A	Grade B	Grade C
Carbon, max	0.25 ^A	0.30 ^B	0.35 ^B
Manganese	0.27–0.93	0.29–1.06	0.29–1.06
Phosphorus, max	0.035	0.035	0.035
Sulfur, max	0.035	0.035	0.035
Silicon, min	0.10	0.10	0.10
Chrome, max ^C	0.40	0.40	0.40
Copper, max ^C	0.40	0.40	0.40
Molybdenum, max ^C	0.15	0.15	0.15
Nickel, max ^C	0.40	0.40	0.40
Vanadium, max ^C	0.08	0.03	0.08

^A For each reduction of 0.01 % below the specified carbon maximum, an increase of 0.06 % manganese above the specified maximum will be permitted up to a maximum of 1.35 %.

^B Unless otherwise specified by the purchaser, for each reduction of 0.01 % below the specified carbon maximum, an increase of 0.06 % manganese above the specified maximum will be permitted up to a maximum of 1.65 %.

^C These five elements combined shall not exceed 1 %.

MECHANICAL TEST

Coated seamless carbon steel pipes will be delivery with mechanical properties in compliance with Table 2

TABLE 2 Tensile Requirements

	Grade A		Grade B		Grade C	
	Longitudinal	Transverse	Longitudinal	Transverse	Longitudinal	Transverse
Tensile strength, min, psi [MPa]	48 000 [330]		60 000 [415]		70 000 [485]	
Yield strength, min, psi [MPa]	30 000 [205]		35 000 [240]		40 000 [275]	
Elongation in 2 in. [50 mm], min, %:						
Basic minimum elongation transverse strip tests, and for all small sizes tested in full section	35	25	30	16.5	30	16.5
When standard round 2-in. [50-mm] gage length test specimen is used	28	20	22	12	20	12
For longitudinal strip tests	A		A		A	
For transverse strip tests, a deduction for each 1/2-in. [0.8-mm] decrease in wall thickness below 5/16 in. [7.9 mm] from the basic minimum elongation of the following percentage shall be made		1.25		1.00		1.00

^A The minimum elongation in 2 in. [50 mm] shall be determined by the following equation:

$$e = 625 \cdot 000A^{0.2} / U^{0.9}$$

for inch-pound units, and

$$e = 1 \cdot 940A^{0.2} / U^{0.9}$$

NONDESTRUCTIVE TEST

the full body of each pipe shall be tested with a nondestructive electric test in accordance with Practice E213, E309, or E570 as alternative of hydrostatic test.

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MARKING

Each pipe shall be marked with dimension, heat number applicable standard by ink or low stress / die stamp as per manufacturer procedure. For small size, marking describe shall be addend on security TAG metal/plastic.

CUSTOMER:			
ORDER:		ITEM:	
PROJECT:			
QUANTITY:	KG.	M.	N.
MANUFACTURER:			
SPECIFICATION:			
DIMENSIONS:	D.N.	Inc. *Thick.	mm.
HEAT NUMBER:			

DIMENSION TOLLERANCE

Thickness: the minimum wall thickness at any point shall not be more than 12,5% under the specified wall thickness
Diameter: Except for pipe ordered as special outside diameter, variations in outside diameter shall not exceed those given in table 3.

TABLE 3 Variations in Outside Diameter

NPS [DN Designator]	Permissible Variations in Outside Diameter			
	Over		Under	
	in.	mm	in.	mm
1/8 to 1 1/2 [6 to 40], incl	1/64 (0.015)	0.4	1/64 (0.015)	0.4
Over 1 1/2 to 4 [40 to 100], incl	1/32 (0.031)	0.8	1/32 (0.031)	0.8
Over 4 to 8 [100 to 200], incl	1/16 (0.062)	1.6	1/32 (0.031)	0.8
Over 8 to 18 [200 to 450], incl	3/32 (0.093)	2.4	1/32 (0.031)	0.8
Over 18 to 26 [450 to 650], incl	1/8 (0.125)	3.2	1/32 (0.031)	0.8
Over 26 to 34 [650 to 850], incl	5/32 (0.156)	4.0	1/32 (0.031)	0.8
Over 34 to 48 [850 to 1200], incl	3/16 (0.187)	4.8	1/32 (0.031)	0.8

PACKING

packing procedure according to PROCEDURE QCM- 10- IS.

On pictures below sample of Carbon steel for material up 6" (bundle pipes) and above 8" (loose pipes)



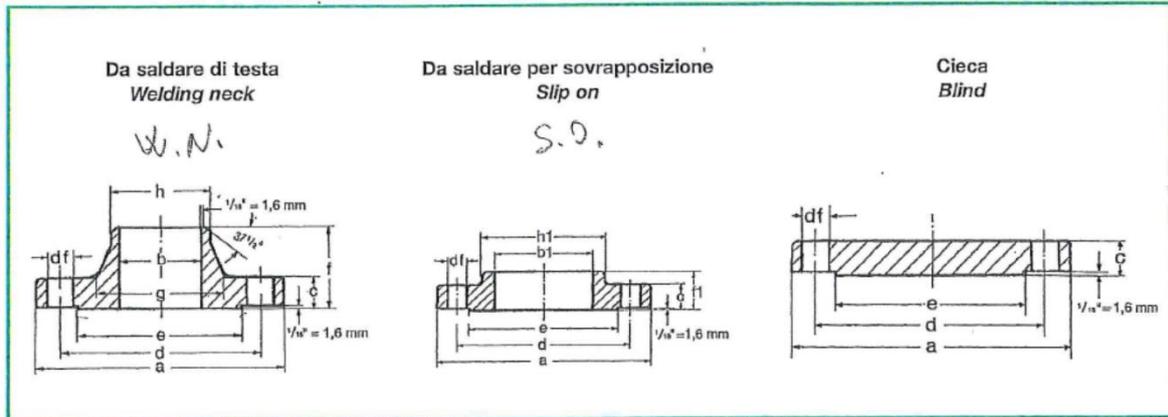
ISSUED BY

APPROVED BY

CUSTOMER APPROVAL

FLANGE ASME/ANSI 300 LB - PN. 50
ASME-ANSI 300 LB - NP. 50 FLANGES

Cod. FA352
FA373
FA385
(A105)



Norme: ASME/ANSI B16.5

Acciai: Al Carbonio ASTM A105N - ASTM A350 LF1/LF2/LF3
Inox ASTM A182 F 304/304L/304H/316/316L/316H/
321/321H/347/347H
Legati ASTM A182 F1/F5/F5a/F9/F11/F12/F22/F91

Superfici di tenuta: Piane (FF) - a gradino (RF) - per guarnizioni ad anello
metallico (RTJ)
Ad incameratura semplice larga o stretta (LM-SM-LF-SG)
Ad incameratura doppia larga o stretta (LT-ST-LG-SG)

Finitura: 125/250 AARH

Standards: ASME/ANSI B16.5

Steels: Carbon to ASTM A105N - ASTM A350 LF1/LF2/LF3
Stainless to ASTM A182 F 304/304L/304H/316/316L/316H/
321/321H/347/347H
Alloy to ASTM A182 F1/F5/F5a/F9/F11/F12/F22/F91

Surfaces: Flat (FF) - Raised (RF) - for metallic ring gaskets (RTJ)
Large or small male and female (LM-SM-LF-SF)
Large or small tongue and groove (LT-ST-LG-SG)

Finishings: 125/250 AARH

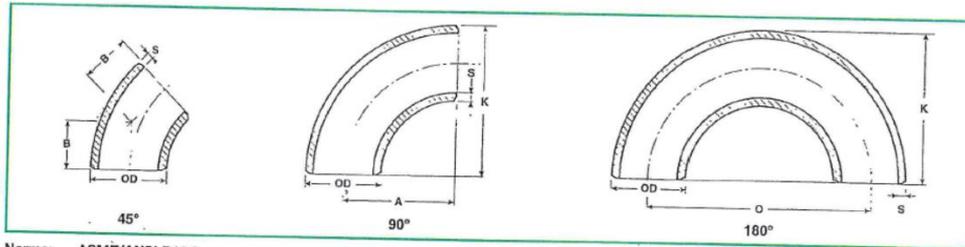
Ø-dia.	a	b	b1	c	d	e	f	f1	g	h	h1	Fori / Holes		Kg.			Tiranti / Bolts		
												df	N.	WN	SO	Blind	Ø	RF	RTJ
1/2"	95,2	15,7	22,3	14,3	66,7	34,9	52,4	22,2	38,1	21,3	38,1	15,9	4	0,80	0,70	0,80	1/2"	70	75
3/4"	117,5	20,8	27,7	15,9	82,5	42,9	57,1	25,4	47,6	26,7	47,6	19,0	4	1,40	1,20	1,20	5/8"	75	90
1"	123,8	26,7	34,5	17,5	88,9	50,8	61,9	27,0	54,0	33,4	54,0	19,0	4	1,80	1,40	1,50	5/8"	85	95
1 1/4"	133,3	35,1	43,2	19,0	98,4	63,5	65,1	27,0	63,5	42,2	63,5	19,0	4	2,70	1,80	2,00	5/8"	85	95
1 1/2"	155,6	40,9	49,5	20,6	114,3	73,0	68,3	30,2	69,8	48,3	69,8	22,2	4	3,60	2,70	2,90	3/4"	95	110
2"	165,1	52,6	62,0	22,2	127,0	92,1	69,8	33,3	84,1	60,3	84,1	19,0	8	4,10	3,20	3,60	5/8"	90	110
2 1/4"	190,5	62,7	74,7	25,4	149,2	104,8	76,2	38,1	100,0	73,1	100,0	22,2	8	5,40	4,50	5,40	3/4"	100	120
3"	209,5	78,0	90,7	28,6	168,3	127,0	79,4	42,9	117,5	88,9	117,5	22,2	8	7,30	5,90	7,30	3/4"	110	125
3 1/2"	228,6	90,2	103,4	30,2	184,1	139,7	81,0	44,4	133,3	101,6	133,3	22,2	8	8,20	7,70	9,50	3/4"	110	125
4"	254,0	102,4	116,1	31,7	200,0	157,2	85,7	47,6	146,0	114,3	146,0	22,2	8	11,30	10,00	12,20	3/4"	115	135
5"	279,4	128,3	143,8	34,9	234,9	185,7	98,4	50,8	177,8	141,3	177,8	22,2	8	16,00	12,70	15,90	3/4"	120	140
6"	317,5	154,2	170,5	36,5	269,9	215,9	98,4	52,4	206,4	168,4	206,4	22,2	12	20,20	17,70	22,70	3/4"	125	145
8"	381,0	202,7	221,5	41,3	330,2	269,9	111,1	61,9	260,3	219,1	260,3	25,4	12	30,50	26,30	37,00	7/8"	140	160
10"	444,5	245,5	276,3	47,6	387,3	323,8	117,5	66,7	320,7	273,0	320,7	29,5	16	44,50	36,60	55,00	1"	160	180
12"	520,7	304,8	327,1	50,8	450,8	381,0	130,2	73,0	374,4	323,8	374,6	31,7	16	62,50	52,00	84,00	1 1/4"	170	190
14"	584,2		359,1	54,0	514,3	412,7	142,9	76,2	425,4	355,6	425,4	31,7	20	86,00	74,00	107,00	1 1/4"	180	195
16"	647,2		410,5	57,1	571,5	469,0	146,0	82,5	482,6	406,4	482,6	34,9	20	111,50	88,00	139,00	1 1/4"	190	210
18"	711,0		461,8	60,3	628,6	533,4	158,7	88,9	533,4	457,2	533,4	34,9	24	141,00	115,00	177,00	1 1/4"	195	215
20"	774,5		513,1	63,5	685,8	584,2	161,9	95,2	587,4	508,0	584,2	34,9	24	172,00	139,00	228,00	1 1/2"	210	230
22"	838,2		564,4	66,7	742,9	641,2	165,1	101,6	641,2	558,8	641,2	41,3	24	195,00	197,00	270,00	1 1/2"	230	255
24"	914,4		615,9	69,8	812,8	692,1	168,3	106,4	701,7	609,6	701,7	41,3	24	247,00	212,00	350,00	1 1/2"	235	260

Per diametri superiori al Ø 24" vedere:
- Norme MSS SP44 per ASME-ANSI B16.47A
- Norme API STD 605 per ASME-ANSI B16.47B

For sizes over 24" see:
- MSS SP44 Standard for ASME-ANSI B16.47A
- API STD 605 Standard for ASME-ANSI B16.47B

**CURVE ANSI LONG RADIUS ($R = 1,5 D$)
LONG RADIUS ($R = 1,5 D$) ANSI BENDS**

Cod. RFW368
(90° STD WPB)



Norme: ASME/ANSI B16.9

Acciai: Al carbonio ASTM A.234 WPB/ASTM A.420 WPL6 - WPL3/
Inox ASTM A.403 - WP304-304L-316-316L-321/
Legati ASTM A.234 WP1-WP5-WP9-WP11-WP22

Estremità: Smussate a norma ASME/ANSI B16.25

Standard: ASME/ANSI B16.9

Steels: ASTM A.234 WPB/ASTM A.420 WPL6 - WPL3 Carbon steel/
ASTM A.403 - WP304-304L-316-316L-321 Stainless steel/
ASTM A.234 WP1-WP5-WP9-WP11-WP22 Alloy steel

Ends: Beveled according to ASME/ANSI B16.25 standards



ø - dia.	OD	A	B	O	K	SCHEDULE (SPESS. / THICKN. S)						
						20	STD	XS	40	80	160	XXS
1/2"	21,3	38,1	15,8	76,2	47,6	-	2,77	3,73	2,77	3,73	4,75	7,47
3/4"	26,7	38,1	19,0	76,2	51,0	-	0,06	0,10	0,08	0,10	0,12	0,15
1"	33,4	38,1	22,2	76,2	55,6	-	2,87	3,91	2,87	3,91	5,54	7,82
1 1/4"	42,2	47,6	25,4	95,2	69,8	-	0,08	0,10	0,06	0,10	0,13	0,17
1 1/2"	48,3	57,2	28,6	114,3	82,5	-	3,38	4,55	3,38	4,55	6,35	9,09
2"	60,3	76,2	34,9	152,4	106,4	-	0,15	0,19	0,15	0,19	0,25	0,33
2 1/2"	73,0	95,2	44,4	190,5	131,8	-	3,56	4,85	3,56	4,85	6,35	9,70
3"	88,9	114,3	50,8	228,6	158,8	-	0,26	0,34	0,26	0,34	0,42	0,60
3 1/2"	101,6	133,4	57,2	266,7	184,2	-	3,68	5,08	3,68	5,08	7,14	10,16
4"	114,3	152,4	63,5	304,8	209,6	-	0,36	0,49	0,36	0,49	0,65	0,86
5"	141,3	190,5	79,4	381,0	261,9	-	3,91	5,54	3,91	5,54	8,74	11,07
6"	168,3	228,6	95,2	457,2	312,7	-	0,65	0,90	0,65	0,90	1,35	1,62
8"	219,1	304,8	127,0	609,6	414,3	-	5,16	7,01	5,16	7,01	9,52	14,02
10"	273,0	381,0	158,8	762,0	517,5	-	1,30	1,71	1,30	1,71	2,25	3,00
12"	323,8	457,2	190,5	914,4	619,1	-	5,49	7,62	5,49	7,62	11,12	15,24
14"	355,6	533,4	222,2	1066,8	711,2	-	2,00	2,75	2,00	2,75	4,00	5,00
16"	406,4	609,6	254,0	1219,1	812,8	-	5,74	8,06	5,74	8,06	-	-
18"	457,2	685,8	295,8	1371,6	914,4	-	3,00	4,00	3,00	4,00	-	-
20"	508,0	762,0	317,5	1524,0	1016,0	-	6,02	8,56	6,02	8,56	13,49	17,12
22"	558,8	838,2	343,0	1676,4	1117,8	-	4,00	5,00	4,00	5,00	8,00	10,00
24"	609,6	914,4	381,0	1828,8	1219,2	-	6,55	9,52	6,55	9,52	16,87	19,05
26"	660,4	990,6	406,0	-	1320,8	-	7,00	9,00	7,00	9,00	15,00	18,00
28"	711,2	1066,8	436,0	-	1422,4	-	7,11	10,97	7,11	10,97	18,24	21,94
30"	762,0	1143,0	470,0	-	1524,0	-	10,00	15,00	10,00	15,00	25,00	29,00
32"	812,8	1219,1	502,0	-	1625,6	-	6,35	8,18	6,35	8,18	23,01	22,22
34"	863,6	1295,4	533,0	-	1727,2	-	16,00	21,00	16,00	21,00	55,00	52,00
36"	914,4	1371,6	565,0	-	1828,8	-	9,27	12,70	9,27	12,70	28,57	25,40
							25,00	37,00	25,00	37,00	58,00	94,00
							6,35	9,52	10,31	17,45	33,32	25,40
							36,00	54,00	71,00	88,00	175,00	135,00
							7,92	9,52	12,70	11,72	19,05	35,71
							57,00	69,00	91,00	80,00	133,00	240,00
							7,92	9,52	12,70	12,70	21,41	40,46
							75,00	90,00	119,00	120,00	196,00	360,00
							7,92	9,52	12,70	14,27	23,80	45,24
							95,00	114,00	151,00	170,00	275,00	500,00
							9,52	9,52	12,70	15,06	26,19	49,99
							171,00	171,00	226,00	220,00	375,00	680,00
							9,52	9,52	12,70	-	-	-
							203,00	203,00	270,00	370,00	640,00	1165,00
							12,70	9,52	12,70	17,45	-	-
							317,00	237,00	315,00	-	-	-
							12,70	9,52	12,70	17,45	-	-
							368,00	275,00	368,00	-	-	-
							12,70	9,52	12,70	17,45	-	-
							422,00	316,00	421,00	-	-	-
							12,70	9,52	12,70	17,45	-	-
							482,00	360,00	480,00	660,00	-	-
							12,70	9,52	12,70	17,45	-	-
							544,00	407,00	552,00	745,00	-	-
							12,70	9,52	12,70	17,45	-	-
							610,00	457,00	608,00	910,00	-	-

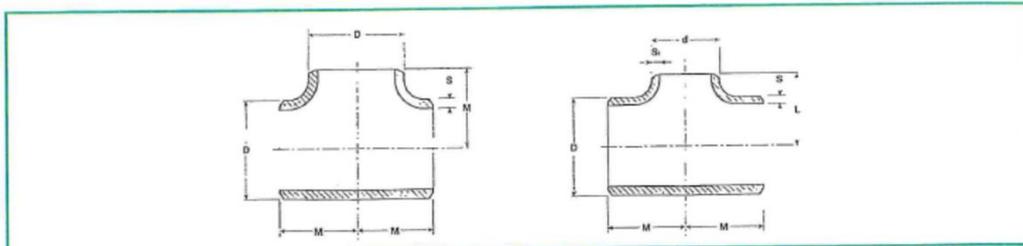
Tutti i valori sono espressi in mm / All values are in mm

Il valore in grassetto si riferisce al peso in Kg. delle curve a 90° / The bold value refers to the weight in Kgs of 90° elbow

Le dimensioni riportate nelle tabelle potranno subire variazioni senza preavviso. / Dimensions can be changed without notice.

TEE UGUALI E RIDOTTI
EQUAL AND REDUCING TEES

Cod. RFW377 **RFW384**
(uguali STD WPB) **(ridotti STD WPB)**



Norme: ASME/ANSI B16.9
Acciai: Al carbonio ASTM A.234 WPB/ASTM A.420 WPL6 - WPL3/
Inox ASTM A.403 - WP304-304L-316-316L-321/
Legati ASTM A.234 WP1-WP5-WP9-WP11-WP22-WP91
Estremità: Smussate a norma ASME/ANSI B16.25

Standard: ASME/ANSI B16.9
Steels: ASTM A.234 WPB/ASTM A.420 WPL6 - WPL3 Carbon steel/
ASTM A.403 - WP304-304L-316-316L-321 Stainless steel/
ASTM A.234 WP1-WP5-WP9-WP11-WP22-WP91 Alloy steel
Ends: Beveled according to ASME/ANSI B16.25 standards

8° - 16°



Ø - dia.	D	d	M	L	SCH. 20		SCH. STD		SCH. XS		SCH. 40		SCH. 80		SCH. 160		SCH. XXS	
					S	S1	S	S1	S	S1	S	S1	S	S1	S	S1	S	S1
8"	219,1	-	177,8	177,8	6,35	-	8,18	-	12,70	-	8,18	-	12,70	-	23,01	-	22,22	-
8"x6"	219,1	168,3		168,2	6,35	6,35	8,18	7,11	12,70	10,97	8,18	7,11	12,70	10,97	23,01	18,24	22,22	21,94
8"x5"	219,1	141,3		161,9	-	-	8,18	6,55	12,70	9,52	8,18	6,55	12,70	9,52	23,01	15,87	22,22	19,05
8"x4"	219,1	114,3		165,5	-	-	8,18	6,02	12,70	8,56	8,18	6,02	12,70	8,56	23,01	13,49	22,22	17,12
8"x3 1/2"	219,1	101,8		152,4	-	-	8,18	5,74	12,70	8,08	8,18	5,74	12,70	8,08	-	-	-	-
8"x3"	219,1	88,9		150,8	-	-	8,18	5,49	12,70	7,62	8,18	5,49	12,70	7,62	23,01	11,12	22,22	15,24
10"	273,0	-	215,9	215,9	6,35	-	9,27	-	12,70	-	9,27	-	15,06	-	28,57	-	25,40	-
10"x8"	273,0	219,1		203,2	6,35	6,35	9,27	8,18	12,70	12,70	9,27	8,18	15,06	12,70	28,57	23,01	25,40	22,22
10"x6"	273,0	168,3		193,7	-	-	9,27	7,11	12,70	10,97	9,27	7,11	15,06	10,97	28,57	18,24	25,40	21,94
10"x5"	273,0	141,3		190,5	-	-	9,27	6,55	12,70	9,52	9,27	6,55	15,06	9,52	28,57	15,87	25,40	19,05
10"x4"	273,0	114,3		184,2	-	-	9,27	6,02	12,70	8,56	9,27	6,02	15,06	8,56	28,57	13,49	25,40	17,12
12"	323,8	-		254,0	254,0	6,35	-	9,52	-	12,70	-	10,31	-	17,45	-	33,32	-	25,40
12"x10"	323,8	273,0	241,3		6,35	6,35	9,52	9,27	12,70	12,70	10,31	9,27	17,45	15,06	33,32	28,57	25,40	25,40
12"x8"	323,8	219,1	228,6		6,35	6,35	9,52	8,18	12,70	12,70	10,31	8,18	17,45	12,70	33,32	23,01	25,40	22,22
12"x6"	323,8	168,3	219,1		6,35	6,35	9,52	7,11	12,70	10,97	10,31	7,11	17,45	10,97	33,32	18,24	25,40	21,94
12"x5"	323,8	141,3	215,9		-	-	9,52	6,55	12,70	9,52	10,31	6,55	17,45	9,52	33,32	15,87	25,40	19,05
12"x4"	323,8	114,3	214,1		-	-	9,52	6,02	12,70	8,56	10,31	6,02	17,45	8,56	33,32	13,49	25,40	17,12
14"	355,6	-	279,4	279,4	7,92	-	9,52	-	12,70	-	11,12	-	19,05	-	35,71	-	-	-
14"x12"	355,6	323,8		269,9	7,92	6,35	9,52	9,52	12,70	12,70	11,12	10,31	19,05	17,45	35,71	33,32	-	-
14"x10"	355,6	273,0		257,2	7,92	6,35	9,52	9,27	12,70	12,70	11,12	9,27	19,05	15,06	35,71	28,57	-	-
14"x8"	355,6	219,1		247,7	7,92	6,35	9,52	8,18	12,70	12,70	11,12	8,18	19,05	12,70	35,71	23,01	-	-
14"x6"	355,6	168,3		238,1	7,92	6,35	9,52	7,11	12,70	10,97	11,12	7,11	19,05	10,97	35,71	18,24	-	-
16"	406,4	-		304,8	304,8	7,92	-	9,52	-	12,70	-	12,70	-	21,41	-	40,46	-	-
16"x14"	406,4	355,6	304,8		7,92	7,92	9,52	9,52	12,70	12,70	12,70	11,12	21,41	19,05	40,46	35,71	-	-
16"x12"	406,4	323,8	295,6		7,92	6,35	9,52	9,52	12,70	12,70	12,70	10,31	21,41	17,45	40,46	33,32	-	-
16"x10"	406,4	273,0	282,6		7,92	6,35	9,52	9,27	12,70	12,70	12,70	9,27	21,41	15,06	40,46	28,57	-	-
16"x8"	406,4	219,1	273,1		7,92	6,35	9,52	8,18	12,70	12,70	12,70	8,18	21,41	12,70	40,46	23,01	-	-
16"x6"	406,4	168,3	263,5		7,92	6,35	9,52	7,11	12,70	10,97	12,70	7,11	21,41	10,97	40,46	18,24	-	-

SEGUE / CONTINUE

Tutti i valori sono espressi in mm. / All values are in mm - Il valore in grassetto si riferisce al peso in Kg. / The bold value referring to the weight in Kgs
Le dimensioni riportate nelle tabelle potranno subire variazioni senza preavviso. / Dimensions can be changed without notice.