



# HOW INNOVATION TAKES FORM

**COLD FORMED ERW**  
Pipes | Profiles  
Open Sections | Custom Shapes

*Informative Brochure*



# 4

Steel Pipes



Water and Gas Pipes, Industrial Pipes, Drilling Pipes, Exhaust Pipes.

# 8

Steel Profiles



Welded Profiles (Square, Rectangular, Parallelogram and more.)

# 10

Steel Grades



High yield low alloy steels can be utilized to reduce the thickness and weight.

# index

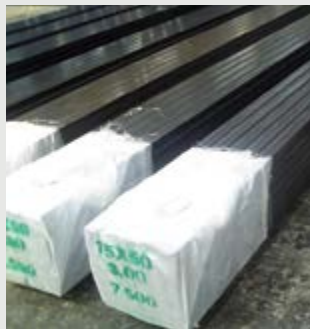
Quality control process starts with the acceptance of the raw material into the mill. The received coils are checked for size and thickness conformity. Samples are taken for the physical and chemical property



# 12

Tests and Reports

It is possible to arrange various packages in order to best serve the customers' needs. Packages can be changed to manage the weight or packing materials.



# 14

Packaging and Transportation

Cold formed open profiles (U, V, C, J and more) are utilized in construction and special steel projects. It is possible to design extraordinary shapes for the needs of challenging steel project designs.



# 16

Open Sections | Custom Shapes



Renewed ERW production lines of MMZ are developed following heavy R&D investments. These powerful production lines are capable of processing high yield steel such as S420, S500 and S700.



## Innovators

Our goal has always been advancing through customer satisfaction and innovation. Following this goal, MMZ has succeeded in always renewing itself and catering to changing needs of customers. With innovative solutions provided to our customers we are able to serve to satisfaction. With our heavy focus on R&D, we are able to constantly renew ourselves and bring to life innovative products for extraordinary projects



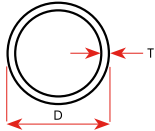
## Creators

With over 30 years of experience in cold formed steel production; we are proud to be one of the select few producers capable of manufacturing extraordinary products developed according to the needs of our customers. We are sharing this expertise with you in order to create the most effective solution for your needs.

## Developers

Our purpose is to deliver the highest quality goods with the speediest service possible. Our self developed technology enables the manufacturing of products with the tightest tolerances. All of MMZ's products are manufactured according to the internationally recognized standards of; European Norms (EN), American Society for Testing and Materials (ASTM) and International Organization for Standardization (ISO), Turkish Standards Institute (TSE).





## EN 10219 Pipes \*

Diameter		Thickness (T) mm																		
D (mm)	inch	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	7,00	8,00	9,00	10,00	12,00	12,50	14,00	15,00	
Ø 17,2	3/8"	0,58	0,75	0,91	1,05															
Ø 21,3	1/2"	0,73	0,95	1,16	1,35															
Ø 25		0,87	1,13	1,39	1,63															
Ø 26,9	3/4"	0,94	1,23	1,50	1,77	2,02														
Ø 30,0		1,05	1,38	1,70	2,00	2,29														
Ø 32,0		1,13	1,48	1,82	2,15	2,46														
Ø 33,7	1"	1,19	1,56	1,92	2,27	2,61														
Ø 38		1,35	1,78	2,19	2,59	2,98	3,35													
Ø 42,4	1 1/4"	1,51	1,99	2,46	2,91	3,36	3,79													
Ø 45		1,61	2,12	2,62	3,11	3,58	4,04													
Ø 48,3	1 1/2"	1,73	2,28	2,82	3,35	3,87	4,37	4,86												
Ø 51		1,83	2,42	2,99	3,55	4,10	4,64	5,16	5,67											
Ø 57		2,05	2,71	3,36	4,00	4,62	5,23	5,83	6,41											
Ø 60,3	2"	2,18	2,88	3,56	4,24	4,90	5,55	6,19	6,82	7,43	8,03									
Ø 63			3,01	3,73	4,44	5,14	5,82	6,49	7,15	7,80	8,43									
Ø 76,1	2 1/2"		3,65	4,54	5,41	6,27	7,11	7,95	8,77	9,58	10,4									
Ø 88,9	3"		4,29	5,33	6,36	7,37	8,38	9,37	10,3	11,3	12,3									
Ø 102			4,93	6,13	7,32	8,50	9,67	10,82	12,0	13,1	14,1									
Ø 108				6,50	7,77	9,02	10,3	11,5	12,7	13,9	15,09									
Ø 114,3	4"			6,89	8,23	9,56	10,9	12,2	13,5	14,8	16,0									
Ø 127,0				7,68	9,17	10,66	12,1	13,6	15,0	16,5	17,9									
Ø 133,0				8,05	9,62	11,18	12,7	14,3	15,8	17,3	18,8									
Ø 139,7	5"			8,46	10,1	11,8	13,4	15,0	16,6	18,2	19,8	22,91	26	29,01	32					
Ø 152,4				9,24	11,1	12,9	14,6	16,4	18,2	19,9	21,7	25,1	28,49							
Ø 159,0							15,3	17,1	19,0	20,8	22,6	26,24	29,79							
Ø 168,3	6"				12,2	14,2	16,2	18,2	20,1	22,1	24,0	27,8	31,6	35,4	39,0					
Ø 193,7	7"				14,11	16,4	18,7	21,0	23,3	25,5	27,8	32,2	36,6	41,0	45,3	53,8				
Ø 219,1	8"				16,0	18,6	21,2	23,8	26,4	29,0	31,5	36,6	41,6	46,6	51,6	61,3				
Ø 244,5	9"						23,7	26,6	29,5	32,4	35,3	41,0	46,7	52,3	57,8	68,8				
Ø 273	10"							29,8	33,0	36,3	39,5	45,9	52,3	58,6	64,9	77,2				
Ø 323,9	12"							35,4	39,3	43,2	47,0	54,7	62,3	69,9	77,4	92,3	96,0	107,0	114,3	

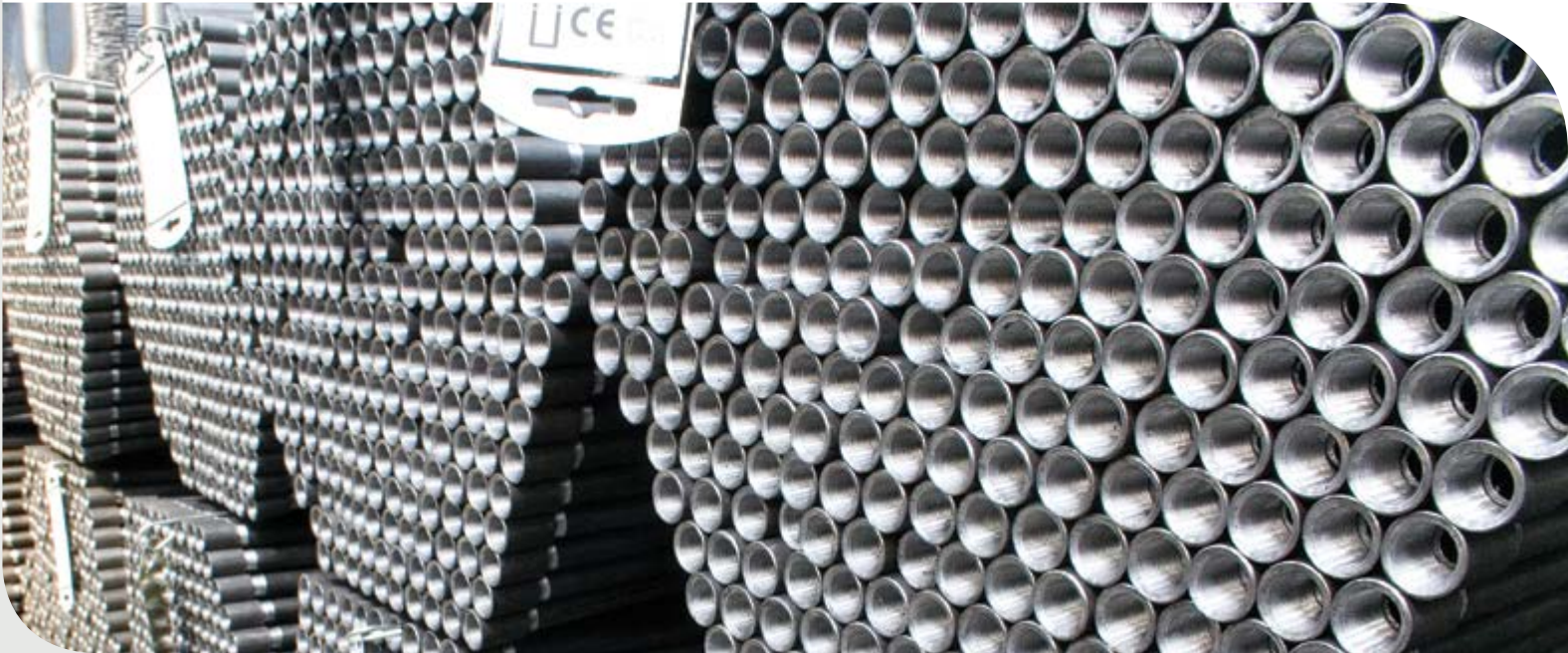
\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)

Production Standards:

**Water and Gas Pipes:** EN 10217-1 TR1, EN 10255, DIN 2440, BS 1187, ISO 65, N FA49-145, ASTM A53 (Gr A), ASTM A500, DIN 2999-2986, BS 1387, SI 1458

**Industrial Pipes:** DIN 1387, DIN 2458-1615 & 1626, BS 6363, BS 6323, BS 1139, EN 39, EN 10219-2



### ASTM A500 Pipes

		Nominal Weights(Kg/m)																		
		Nominal Weights (Lb/ft)																		
mm	3,05	3,18	3,40	3,57	3,68	3,86	3,91	4,76	5,16	5,49	5,54	5,59	5,74	6 ,02	6,35	6,55	7,94	9,53	12,70	
inch	0,120	0,125	0,134	0,140	0,145	0,152	0,154	0,188	0,203	0,216	0,218	0,220	0,226	0,237	0,250	0,258	0,3125	0,375	0,500	
Size(inch)	Size(mm)				3,39	4,06														
1,66	42,2				2,27	2,72														
1,9	48,3																			
2,375	60,3		4,49					5,46	6,57			7,51				8,48				
			3,01					3,66	4,400			5,030				5,680				
2,5	63,5		4,73						6,94							8,97				
			3,17						4,650							6,010				
2,875	73,0		5,48						8,06							10,48				
			3,67						5,400	5,800						7,020				
3	76,2	5,51		6,14			6,91	8,44	9,06	9,60						10,97				
		3,69		4,11			4,63	5,650	6,070	6,430						7,350				
3,5	88,9		6,73					9,94	10,67	11,32						12,97				
			4,51					6,660	7,150	7,580						8,690				
4	101,6		7,73					11,44				13,27	13,62	14,23	15,00					
			5,18					7,660				8,890	9,120	9,530	10,050					
4,5	114,3		8,73					12,94						16,12						
			5,85					8,670						10,800						
5	127,0		9,72					14,44							18,95	23,35	27,68	35,91		
			6,51					9,670							12,690	15,640	18,540	24,050		
5,5	139,7															21,59	30,67	39,91		
																14,460	20,540	26,730		
5,563	141,3			11,62				16,12								21,84	31,05			
				7,78				10,800								14,630	20,800			
6	152,4		11,72					17,44						22,95	28,32	33,67	43,89			
			7,85					11,680						15,370	18,970	22,550	29,400			
6,125	155,6							17,81						23,44	28,95	34,41	44,89			
								11,930						15,700	19,390	23,050	30,070			
6,625	168,3		12,97					19,32						25,44	31,44	37,40	48,88			
			8,69					12,940						17,040	21,060	25,050	32,740			
6,875	174,6							20,07						26,44	32,68	38,91	50,87			
								13,440						17,710	21,890	26,060	34,070			
7	177,8		13,72					20,44						26,93	33,31	39,65	51,87			
			9,19					13,690						18,040	22,310	26,560	34,740			
7,5	190,5							21,95						28,93	35,79	42,64	55,87			
								14,700						19,380	23,970	28,560	37,420			
7,625	193,7		14,96												38,21	43,39				
			10,02												25,59	29,06				
8,625	219,1							25,32						33,41	42,67	49,37	64,84			
								16,96						22,38	28,58	33,07	43,43			
8,75	222,3							25,69						33,92	42,01	50,12	65,84			
								17,21						22,72	28,14	33,57	44,10			
9,625	244,5							28,32						37,40	46,37	55,36	72,81			
								18,97						25,05	31,06	37,08	48,77			
10	254,0							29,44						38,91	48,24	57,60	75,81			
								19,72						26,06	32,31	38,58	50,78			
10,75	273,1													41,89			81,80			
														28,06			54,79			
11,25	285,8							33,19						43,89	54,46	65,09	85,79			
								22,23						29,40	36,48	43,60	57,46			
12,25	311,2							36,19						47,88	59,45	71,07	93,76			
								24,24						32,07	39,82	47,60	62,80			
12,313	312,8							36,38						48,13	59,76	71,45	94,27			
								24,37						32,24	40,03	47,86	63,14			
12,5	317,5							36,94						48,88	60,69	72,57	95,76			
								24,74						32,74	40,65	48,61	64,14			
12,75	323,9													49,88			74,07	97,76		
														33,41			49,61	65,48		

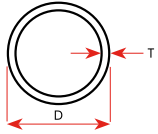
Nominal Weights (kg/m)  
 Nominal Weights (lb/ft)

Pipes  
 Water, Gas / Industrial



## ASTM A53 (Gr A) Pipes

# Water, Gas / Industrial Pipes



NPS Designator	DN Designator	External Diameter (D)		Nominal Thickness (T)		Nominal Weight (Mass)		Schedule No	Test Pressure	
		inch	mm	inch	mm	lb/ft	kg/m		Grade A	
									psi	kPa
1/2	15	0,840	21,3	0,109	2,77	0,85	1,27	40	700	4800
3/4	20	1,050	26,7	0,113	2,87	1,13	1,69	40	700	4800
1	25	1,315	33,4	0,133	3,38	1,68	2,50	40	700	4800
1 1/4	32	1,660	42,2	0,140	3,56	2,27	3,39	40	1200	8300
1 1/2	40	1,900	48,3	0,145	3,68	2,72	4,05	40	1200	8300
				0,200	5,08	3,63	5,41	80	1800	12400
2	50	2,375	60,3	0,154	3,91	3,66	5,44	40	2300	15900
				0,218	5,54	5,03	7,48	80	2500	17200
2 1/2	65	2,875	73,0	0,203	5,16	5,80	8,63	40	2500	17200
				0,276	7,01	7,67	11,41	80	2500	17200
3	80	3,500	88,9	0,125	3,18	4,51	6,72	-	1290	8900
				0,156	3,96	5,58	8,29	-	1600	11000
				0,188	4,78	6,66	9,92	-	1930	13330
				0,216	5,49	7,58	11,29	40	2220	15300
				0,250	6,35	8,69	12,93	-	2500	17200
3 1/2	90	4,000	101,6	0,181	7,14	9,67	14,40	-	2500	17200
				0,125	3,18	5,18	7,72	-	1120	7700
				0,156	3,96	6,41	9,53	-	1400	6700
				0,188	4,78	7,66	11,41	-	1690	11700
				0,226	5,74	9,12	13,57	40	2030	14000
4	100	4,500	114,3	0,250	6,35	10,02	14,92	-	2250	15500
				0,281	7,14	11,17	16,63	-	2500	17200
				0,125	3,18	5,85	8,71	-	1000	6900
				0,156	3,96	7,24	10,78	-	1250	8600
				0,188	4,78	8,67	12,91	-	1500	10300
5	125	5,563	141,3	0,219	5,56	10,02	14,91	-	1750	12100
				0,238	6,02	10,80	16,07	40	1900	13100
				0,250	6,35	11,36	16,90	-	2000	13800
				0,281	7,14	12,67	18,87	-	2250	15100
				0,156	3,96	9,02	13,41	-	1010	7000
6	150	6,625	168,3	0,188	4,78	10,8	16,09	-	1220	8400
				0,219	5,56	12,51	18,61	-	1420	9800
				0,258	6,55	14,63	21,77	40	1670	11500
				0,281	7,14	15,87	23,62	-	1820	12500
				0,312	7,92	17,51	26,05	-	2020	13900
8	200	8,625	219,1	0,344	8,74	19,19	28,57	-	2230	15400
				0,188	4,78	12,94	19,27	-	1020	7000
				0,219	5,56	15,00	22,31	-	1190	8200
				0,250	6,35	17,04	25,36	-	1360	9400
				0,280	7,11	18,99	28,26	40	1520	10500
10	250	10,750	273,0	0,312	7,92	21,06	31,32	-	1700	11700
				0,344	8,74	23,10	34,38	-	1870	12900
				0,375	9,52	25,05	37,28	-	2040	14100
				0,432	10,97	28,60	42,56	80	2350	16200
				0,188	4,78	16,96	25,26	-	780	5400
				0,203	5,16	18,28	27,22	-	850	5900
				0,219	5,56	19,68	29,28	-	910	6300
				0,250	6,35	22,38	33,31	20	1040	7200
				0,277	7,04	24,72	36,31	30	1160	7800
				0,312	7,92	27,73	41,24	-	1300	9000
				0,322	8,18	28,58	42,55	40	1340	9200
				12	300	12,750	323,8	0,344	8,74	30,45
0,375	9,52	33,07	49,20					-	1570	10800
0,406	10,31	35,67	53,08					60	1700	11700
0,438	11,13	38,33	57,08					-	1830	12600
0,500	12,70	43,43	64,64					80	2090	14400
0,188	4,78	21,23	31,62					-	630	4300
0,203	5,16	22,89	34,08					-	680	4700
0,219	5,56	24,65	36,67					-	730	5000
0,250	6,35	28,06	41,75					20	840	5800
0,279	7,09	31,23	46,49					-	930	6400
12	300	12,750	323,8	0,307	7,80	34,27	51,01	30	1030	7100
				0,344	8,74	38,27	56,96	-	1150	7900
				0,365	9,27	40,52	60,29	40	1220	8400
				0,438	11,13	48,28	71,87	-	1470	10100
				0,500	12,70	54,79	81,52	60	1670	11500
				0,203	5,16	27,23	40,55	-	570	3900
				0,219	5,56	29,34	43,63	-	620	4300
				0,250	6,35	33,41	49,71	20	710	4900
				0,281	7,14	37,46	55,75	-	790	5400
				0,312	7,92	41,48	61,69	-	880	6100
0,330	8,38	43,81	65,18	30	930	6400				
0,344	8,74	45,62	67,90	-	970	6700				
0,375	9,52	49,61	73,78	-	1060	7300				
0,406	10,31	54,79	81,52	40	1150	7900				
0,438	11,13	60,67	88,91	-	1240	8500				
0,500	12,7	69,43	102,7	-	1410	9700				



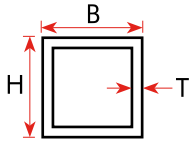


## EN 10219 Square Profiles \*

Sizes	Thickness (T) mm															
	1,50	2,00	2,50	3,00	3,50	4,00	4,5	5,00	6,00	8,00	9,00	10,00	12,00	14,0	16,00	
20x20	0,83	1,05	1,25													
25x25	1,06	1,36	1,64	1,89												
30x30	1,30	1,68	2,03	2,36	2,66	2,94										
35x35	1,53	1,99	2,42	2,83	3,21	3,57										
40x40	1,77	2,31	2,82	3,30	3,76	4,20	4,61	4,99								
50x50	2,24	2,93	3,60	4,25	4,86	5,45	6,02	6,56	7,56							
60x60	2,71	3,56	4,39	5,19	5,96	6,71	7,43	8,13	9,45							
70x70		4,19	5,17	6,13	7,06	7,97	8,85	9,70	11,3							
75x75		4,5	5,56	6,6	7,61	8,59	9,55	10,48	12,27							
80x80		4,82	5,96	7,07	7,61	9,22	10,26	11,3	13,2	16,4						
90x90		5,45	6,74	8,01	8,16	10,5	11,67	12,8	15,1	18,9						
100x100		6,07	7,53	8,96	9,26	11,7	13,08	14,4	17,0	21,4	23,53	25,6				
110x110			8,31	9,90	10,36	13,0	14,5	15,98	18,87	23,9	26,36	28,7				
120x120				10,8	11,46	14,2	15,91	17,5	20,7	26,4	29,19	31,8				
140x140						16,8	18,74	20,7	24,5	31,4	34,84	38,10	43,4			
150x150						18,0	20,15	22,3	26,4	33,9	37,66	41,30	47,1			
160x160						19,3	21,56	23,8	28,3	36,5	40,49	44,40	50,9			
170x170								25,4	30,17	38,97	43,32	47,54	54,68			
175x175								26,18	31,11	40,23	44,73	49,11	56,57			
180x180								27	32,1	41,5	46,14	50,70	58,5			
200x200								30,1	35,8	46,5	51,79	57	66	75,16	83,80	
220x220									39,6	51,5	57,45	63,2	73,5	83,95	93,90	
250x250									45,2	59,1	65,92	72,7	84,8	97,14	109,00	
260x260									47,1	61,6	68,75	75,8	88,6	101,54	114,00	
300x300									54,7	71,6	80,05	88,4	104	119,12	134,00	
350x350									64,08	84,19	94,18	104,06	122,51	141,1	159,18	
400x400									73,5	96,75	108,31	119,76	141,35	16308	184,30	

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)



## ASTM A500 Square Profiles \*

Sizes		Nominal Weights (kg/m)														
		Nominal Weights (lb/ft)														
mm	inch	1,60	1,83	1,98	2,11	2,41	3,05	3,18	3,96	4,57	4,76	6,35	7,94	9,53	12,70	15,875
inch	mm	0,063	0,072	0,078	0,083	0,095	0,120	0,125	0,156	0,180	0,1875	0,250	0,3125	0,375	0,500	0,625
3/4 x 3/4	19,05 x 19,05	0,859	0,965	1,088	1,152	1,299										
		0,577	0,649	0,731	0,732	0,872										
7/8 x 7/8	22,23 x 22,23	1,02	1,15	1,286	1,363	1,539										
		0,684	0,771	0,864	0,915	1,034										
1 x 1	25,40 x 25,40	1,18	1,33	1,43	1,51	1,70	2,07									
		0,791	0,893	0,960	1,010	1,140	1,390									
1 1/4 x 1 1/4	31,75 x 31,75	1,50	1,69	1,82	1,93	2,18	2,68	2,78								
		1,01	1,14	1,23	1,30	0,15	1,80	1,87								
1 1/2 x 1 1/2	38,10 x 38,10	1,81	2,05	2,22	2,35	2,66	3,29	3,41	4,352							
		1,22	1,38	1,49	1,58	1,79	2,21	2,29	2,924							
2 x 2	50,80 x 50,80	2,45	2,79	3,01	3,19	3,62	4,38	4,54	5,50	6,21	6,42	8,04				
		1,65	1,87	2,02	2,14	2,43	2,94	3,05	3,70	4,17	4,31	5,40				
2 1/2 x 2 1/2	63,50 x 63,50		3,58	3,85	4,10	4,66	5,59	5,80	7,08	8,03	8,32	10,6				
			2,41	2,59	2,76	3,13	3,76	3,90	4,76	5,40	5,59	7,10				
3 x 3	76,20 x 76,20			4,64	4,94	5,63	6,81	7,07	8,66	9,85	10,2	13,1				
				3,12	3,32	3,68	4,57	4,75	5,82	6,52	6,86	8,80				
3 1/2 x 3 1/2	88,90 x 88,90					6,59	8,02	8,33	10,2	11,7	12,1	15,6	18,9			
						4,43	5,39	5,60	6,88	7,84	8,14	10,50	12,70			
4 x 4	101,60 x 101,60					7,55	9,23	9,60	11,8	13,5	14,0	18,2	22,0	25,7		
						4,17	6,21	6,45	7,94	9,07	9,41	12,20	14,80	17,30		
5 x 5	127,00 x 127,00								15,4	17,1	17,8	23,2	28,4	33,3		
									10,3	11,5	12,0	15,6	19,1	22,4		
6 x 6	152,40 x 152,40								18,6	20,8	21,6	28,3	34,7	40,9	52,4	
									12,5	14,0	14,5	19,0	23,3	27,5	35,2	
7 x 7	177,80 x 177,80									24,4	24,4	33,3	41,0	48,4	62,5	
										16,4	17,1	22,4	27,6	32,6	42,0	
8 x 8	203,20 x 203,20									28,7	29,8	38,4	47,3	58,0	72,6	88,2
										18,9	19,6	25,8	31,8	37,7	48,8	59,3
10 x 10	254,00 x 254,00											48,5	60,0	71,2	92,9	113,0
												32,6	40,3	47,9	62,4	76,3
12 x 12	304,80 x 304,80												72,6	86,4	113,0	139,0
													48,8	58,0	76,0	93,3
14 x 14	355,60 x 355,60												85,3	102,0	133,0	164,0
													57,3	68,2	89,6	110,0
16 x 16	406,40 x 406,40													117,0	154,0	189,0
														78,4	103,0	127,0

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)  
Nominal Weights (lb/ft)

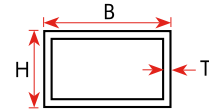
Production Standards of Profiles; EN 10219-2, DIN 2395, DIN 59411, BS 6363, N FA49-541, ASTM A500, UNE 36-537,SI 1458

## EN 10219 Rectangular Profiles \*

Sizes B x H (mm)	Thickness (T) mm											
	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00
30 x 10	0,83	1,05										
30 x 20	1,06	1,36	1,64									
40 x 20	1,30	1,68	2,03									
40 x 30	1,53	1,99	2,42	2,83								
50 x 20	1,53	1,99	2,42	2,83								
50 x 25	1,65	2,15	2,62	3,07								
50 x 30	1,77	2,31	2,82	3,30	4,2							
50 x 40	2,00	2,62	3,21	3,77	4,83	5,77						
50 x 45	2,12	2,78	3,41	4,01	5,14	6,17						
60 x 30	2,00	2,62	3,21	3,77	4,83							
60 x 40	2,24	2,93	3,60	4,25	5,45	6,56						
75 x 50	2,83	3,72	4,58	5,42	7,02	8,52	9,92					
80 x 40	2,71	3,56	4,39	5,19	6,71	8,13						
80 x 60	4,19	5,17	6,13	7,97	9,70	11,3						
90 x 50	4,19	5,17	6,13	7,97	9,70	11,3						
100 x 40	4,19	5,17	6,13	7,97	9,70							
100 x 50	4,50	5,56	6,60	8,59	10,5	12,3						
100 x 80	5,45	6,74	8,01	10,5	12,8	15,1	18,9					
120 x 50	5,13	6,35	7,54	9,9	12,1	14,2						
120 x 60	5,45	6,74	8,01	10,5	12,8	15,1						
120 x 80		7,53	8,76	11,7	14,4	17,0	21,4					
140 x 80			9,90	13,0	16,0	18,9	23,9					
140 x 120				1,55	19,12	22,63	28,92	34,98				
160 x 80				10,8	14,2	17,5	20,7	26,4				
150 x 50				8,96	11,7	14,4	17,0					
150 x 100				11,3	14,9	18,3	21,7	27,7	33,4			
160 x 120				16,76	20,69	24,52	31,43	38,12				
180 x 100				12,7	16,8	20,7	24,5	31,4	38,1			
180 x 120				18,0	22,3	26,4	33,9	41,3				
200 x 100				13,67	18,0	22,3	26,4	33,9	41,3			
200 x 120				19,3	23,8	28,3	36,5	44,4				
200 x 150				21,15	26,18	31,11	40,23	49,11	56,67			
250 x 100				21,15	26,18	31,11	40,23	49,11				
250 x 150				24,3	30,1	35,8	46,5	57,0	66,00			
260 x 180					33,2	39,6	51,5	63,2	73,5			
300 x 100				24,3	30,1	35,8	46,5	57,0				
300 x 200						45,2	59,1	72,7	84,8	97,1	108,9	
350 x 100						40,5	52,8	64,8				
350 x 250						54,7	71,6	88,4	103,7	119,1	134,1	
400 x 100						45,24	59,07	72,66				
400 x 200						54,7	71,6	88,4	103,7	119,1	134,1	
400 x 300						64,08	84,19	104,06	122,51	141,1	159,18	
500 x 200						64,08	84,19	104,06	122,51	141,1	159,18	
500 x 300						73,5	96,7	119,8	141,3	163,1	184,3	

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)



Profiles  
Rectangular



## ASTM A500 Rectangular Profiles \*

Sizes		Nominal Weights (kg/m)														
		Nominal Weights (lb/ft)														
mm	inch	1,60	1,83	1,98	2,11	2,41	3,05	3,18	3,96	4,57	4,76	6,35	7,94	9,53	12,70	15,875
inch	mm	0,063	0,072	0,078	0,083	0,095	0,120	0,125	0,156	0,180	0,1875	0,250	0,3125	0,375	0,500	0,625
1½ x 1	38,1 x 25,4	1,50	1,69	1,82	1,93	2,18	2,68	2,78								
		1,01	1,14	1,230	1,30	1,47	1,80	1,87								
2 x 1	50,8 x 25,4	1,81	2,05	2,22	2,35	2,66	3,29	3,41								
		1,22	1,38	1,49	1,58	1,79	2,21	2,29								
2½ x 1¼	63,5 x 31,7	2,33	2,65	2,86	3,05	3,46	4,38	4,54								
		1,57	1,78	1,92	2,05	2,33	2,94	3,05								
3 x 1½	76,2 x 38,1	2,81	3,20	3,46	3,68	4,18	4,99	5,17	6,29	7,12	7,37					
		1,89	2,15	2,33	2,47	2,81	3,35	3,47	4,23	4,78	4,95					
3 x 2	76,2 x 50,8	3,13	3,58	3,85	4,10	4,66	5,59	5,80	7,08	8,03	8,32	10,60				
		2,10	2,41	2,59	2,76	3,02	3,76	3,90	4,76	5,40	5,59	7,10				
4 x 2	101,6 x 50,8			4,64	4,94	5,63	6,81	7,07	8,66	9,85	10,2	13,1				
				3,12	3,32	3,68	4,57	4,75	5,82	6,62	6,86	8,8				
4 x 3	101,6 x 76,2				5,78	6,59	8,02	8,33	10,2	11,7	12,1	15,6	18,9			
					3,88	4,43	5,39	5,60	6,85	7,86	8,14	10,5	12,7			
5 x 2	127 x 50,8				6,59	8,02	8,33	10,2	11,7	12,1	15,6					
					4,43	5,39	5,60	6,85	7,86	8,14	10,5					
5 x 3	127 x 76,2				7,55	9,23	9,60	11,8	13,5	14,0	18,2	22,0				
					5,07	6,21	6,45	7,93	9,07	9,41	12,2	14,8				
6 x 2	152,4 x 50,8				7,55	9,23	9,60	11,8	13,5	14,0	18,2					
					5,07	6,21	6,45	7,93	9,07	9,41	12,2					
6 x 3	152,4 x 76,2					10,7	11,2	13,8	15,3	15,9	20,7	25,2				
						7,02	7,53	9,27	10,28	10,7	13,9	16,9				
6 x 4	152,4 x 101,6					11,9	12,4	15,4	17,1	17,8	23,2	28,4	33,3			
						7,8	8,3	10,3	11,5	12,0	15,6	19,1	22,4			
7 x 4	177,8 x 101,6						13,7	17,0	19,0	19,7	25,7	31,5	37,1			
							9,2	11,4	12,8	13,2	17,3	21,2	24,9			
7 x 5	177,8 x 127,0							18,6	20,8	21,6	28,3	34,7	40,9			
								12,5	14,0	14,5	19,0	23,3	27,5			
8 x 4	203,2 x 101,6							18,6	20,8	21,6	28,3	34,7	40,9			
								12,5	14,0	14,5	19,0	23,3	27,5			
10 x 6	254,0 x 152,4							24,9	28,1	29,2	38,4	47,3	56,0	72,8		
								16,7	18,9	19,6	25,8	31,8	37,7	48,8		
12 x 8	304,8 x 203,2								35,7	37,3	48,5	60,0	71,2	92,9	113,0	
									24,0	24,8	32,6	40,3	47,9	62,4	76,3	
14 x 4	355,6 x 101,6							27,9	32,14	33,5	48,5	60,0	71,2			
								18,7	21,57	22,5	32,6	40,3	47,8			
14 x 10	355,6 x 254,0										59,8	72,6	86,4	113,0	139,0	
											40,2	48,8	58,1	75,9	93,3	
16 x 8	406,4 x 203,2										59,9	72,6	86,4	113,0	139,0	
											40,2	48,8	58,1	75,9	93,3	
18 x 12	457,2 x 304,8										85,3	102,0	133,0	164,0		
											57,3	68,5	89,4	110,0		
20 x 12	508,0 x 304,8										98,01	117,0	154,0	189,0		
											65,87	78,4	103,0	127,0		

Nominal Weights (kg/m)  
Nominal Weights (lb/ft)

# S420, S500, S600, S700



MMZ's prioritization of R&D establishes MMZ as the sole manufacturer of the heaviest and largest ERW and open sections in the Turkish industry. From S420 to S700, **MMZprime series** products stand out as the consequence of this prioritization.

Grades above S355 are considered High Yield steels. MMZ is capable of manufacturing grades up to S700 MC.

These exceptional steels allow the reduction of thickness (thus, weight) while keeping the given strength of the section intact. Their high yield and tensile properties give them superior elasticity and resistance against deformation.

For their above mentioned advantages, high yield steels are utilized in automotive, mobile construction equipment and construction sectors. Utilizing these special steels, the weight is brought down and the performance is increased.

Diameter	Thickness (T) mm																	
	D (mm)	inch	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	7,00	8,00	9,00	10,00	12,00	
Pipes	Ø 17,2	3/8"	0,58	0,75	0,91	1,05												
	Ø 21,3	1/2"	0,73	0,95	1,16	1,35												
	Ø 25		0,87	1,13	1,39	1,63												
	Ø 26,9	3/4"	0,94	1,23	1,50	1,77	2,02											
	Ø 30,0		1,05	1,38	1,70	2,00	2,29											
	Ø 32,0		1,13	1,48	1,82	2,15	2,46											
	Ø 33,7	1"	1,19	1,56	1,92	2,27	2,61											
	Ø 38		1,35	1,78	2,19	2,59	2,98	3,35										
	Ø 42,4	1 1/4"	1,51	1,99	2,46	2,91	3,36	3,79										
	Ø 45		1,61	2,12	2,62	3,11	3,58	4,04										
	Ø 48,3	1 1/2"	1,73	2,28	2,82	3,35	3,87	4,37	4,86									
	Ø 51		1,83	2,42	2,99	3,55	4,10	4,64	5,16	5,67								
	Ø 57		2,05	2,71	3,36	4,00	4,62	5,23	5,83	6,41								
	Ø 60,3	2"	2,18	2,88	3,56	4,24	4,90	5,55	6,19	6,82	7,43	8,03						
	Ø 63		2,28	3,01	3,73	4,44	5,14	5,82	6,49	7,15	7,80	8,43						
	Ø 76,1	2 1/2"	2,76	3,65	4,54	5,41	6,27	7,11	7,95	8,77	9,58	10,4						
	Ø 88,9	3"		4,29	5,33	6,36	7,37	8,38	9,37	10,3	11,3	12,3						
	Ø 102			4,91	6,13	7,32	8,50	9,67	10,82	12,0	13,1	14,1						
	Ø 108			5,23	6,50	7,77	9,02	10,3	11,5	12,7	13,9	15,09						
	Ø 114,3	4"		5,54	6,89	8,23	9,56	10,9	12,2	13,5	14,8	16						
	Ø 127,0				7,68	9,17	10,66	12,1	13,6	15,0	16,5	17,9						
	Ø 133,0				8,05	9,62	11,18	12,7	14,3	15,8	17,3	18,79						
	Ø 139,7	5"			8,46	10,1	11,8	13,4	15,0	16,6	18,2	19,8	22,91	26	29,01	32		
	Ø 152,4				9,24	11,1	12,9	14,6	16,4	18,2	19,9	21,7	25,1	28,49				
	Ø 159,0							15,3	17,1	19,0	20,8	22,6	26,24	29,79				
	Ø 168,3	6"				12,2	14,2	16,2	18,2	20,1	22,1	24,0	27,8	31,6	36,36	39,0		
	Ø 193,7	7"				14,11	16,4	18,7	21,0	23,3	25,5	27,8	32,2	36,6	41,0	45,3	53,8	
	Ø 219,1	8"				16,0	18,6	21,2	23,8	26,4	29,0	31,5	36,6	41,6	46,63	51,6	61,3	
	Ø 244,5	9"						23,7	26,6	29,5	32,4	35,3	41,0	46,7	52,27	57,8	68,8	
	Ø 273	10"						26,54	29,8	33,0	36,3	39,5	45,9	52,3	58,6	64,9	77,2	
	Ø 323,9	12"							35,4	39,3	43,2	47,0	54,7	62,3	69,89	77,4	92,3	

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)

All Grades Up to S700 MC
  All Grades Up to S600 MC
  All Grades Up to S500 MC
  All Grades Up to S420 MC





Square Profiles	Sizes	Thickness (T) mm														
	B X H (mm)	1,50	2,00	2,50	3,00	3,50	4,00	4,5	5,00	6,00	8,00	9,00	10,00	12,00	14,0	16,00
20x20	0,83	1,05	1,25													
25x25	1,06	1,36	1,64	1,89												
30x30	1,30	1,68	2,03	2,36	2,66	2,94										
35x35	1,53	1,99	2,42	2,83	3,21	3,57										
40x40	1,77	2,31	2,82	3,30	3,76	4,20	4,61	4,99								
50x50	2,24	2,93	3,60	4,25	4,86	5,45	6,02	6,56	7,56							
60x60	2,71	3,56	4,39	5,19	5,96	6,71	7,43	8,13	9,45							
70x70		4,19	5,17	6,13	7,06	7,97	8,85	9,70	11,3							
75x75		4,5	5,56	6,6	7,61	8,59	9,55	10,48	12,27							
80x80		4,82	5,96	7,07	7,61	9,22	10,26	11,3	13,2	16,4						
90x90		5,45	6,74	8,01	8,16	10,5	11,67	12,8	15,1	18,9						
100x100		6,07	7,53	8,96	9,26	11,7	13,08	14,4	17,0	21,4	23,53	25,6				
110x110			8,31	9,90	10,36	13,0	14,5	15,98	18,87	23,9	26,36	28,7				
120x120				10,8	11,46	14,2	15,91	17,5	20,7	26,4	29,19	31,8				
140x140						16,8	18,74	20,7	24,5	31,4	34,84	38,10	43,4			
150x150						18,0	20,15	22,3	26,4	33,9	37,66	41,30	47,1			
160x160						19,3	21,56	23,8	28,3	36,5	40,49	44,40	50,9			
170x170									25,4	30,17	38,97	43,32	47,54	54,68		
175x175									26,18	31,11	40,23	44,73	49,11	56,57		
180x180									27	32,1	41,5	46,14	50,70	58,5		
200x200									30,1	35,8	46,5	51,79	57	66	75,16	83,80
220x220										39,6	51,5	57,45	63,2	73,5	83,95	93,90
250x250										45,2	59,1	65,92	72,7	84,8	97,14	109,00
260x260										47,1	61,6	68,75	75,8	88,6	101,54	114,00
300x300										54,7	71,6	80,05	88,4	104	119,12	134,00
350x350										64,08	84,19	94,18	104,06	122,51	141,1	159,18
400x400										73,5	96,75	108,31	119,76	141,35	16308	184,30

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)

Rectangular Profiles	Sizes	Thickness (T) mm														
	B x H ( mm)	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00			
30 x 10	0,83	1,05														
30 x 20	1,06	1,36	1,64													
40 x 20	1,30	1,68	2,03													
40 x 30	1,53	1,99	2,42	2,83												
50 x 20	1,53	1,99	2,42	2,83												
50 x 25	1,65	2,15	2,62	3,07												
50 x 30	1,77	2,31	2,82	3,30	4,2											
50 x 40	2,00	2,62	3,21	3,77	4,83	5,77										
50 x 45	2,12	2,78	3,41	4,01	5,14	6,17										
60 x 30	2,00	2,62	3,21	3,77	4,83											
60 x 40	2,24	2,93	3,60	4,25	5,45	6,56										
75 x 50	2,83	3,72	4,58	5,42	7,02	8,52	9,92									
80 x 40	2,71	3,56	4,39	5,19	6,71	8,13										
80 x 60		4,19	5,17	6,13	7,97	9,70	11,3									
90 x 50		4,19	5,17	6,13	7,97	9,70	11,3									
100 x 40		4,19	5,17	6,13	7,97	9,70										
100 x 50		4,50	5,56	6,60	8,59	10,5	12,3									
100 x 80		5,45	6,74	8,01	10,5	12,8	15,1	18,9								
120 x 50		5,13	6,35	7,54	9,9	12,1	14,2									
120 x 60		5,45	6,74	8,01	10,5	12,8	15,1									
120 x 80			7,53	8,96	11,7	14,4	17,0	21,4								
140 x 80				9,90	13,0	16,0	18,9	23,9								
140 x 120					1,55	19,12	22,63	28,92	34,98							
160 x 80				10,8	14,2	17,5	20,7	26,4								
150 x 50				8,96	11,7	14,4	17,0									
150 x 100				11,3	14,9	18,3	21,7	27,7	33,4							
160 x 120					16,76	20,69	24,52	31,43	38,12							
180 x 100				12,7	16,8	20,7	24,5	31,4	38,1							
180 x 120					18,0	22,3	26,4	33,9	41,3							
200 x 100				13,67	18,0	22,3	26,4	33,9	41,3							
200 x 120					19,3	23,8	28,3	36,5	44,4							
200 x 150					21,15	26,18	31,11	40,23	49,11	56,67						
250 x 100					21,15	26,18	31,11	40,23	49,11							
250 x 150					24,3	30,1	35,8	46,5	57,0	66,00						
260 x 180						33,2	39,6	51,5	63,2	73,5						
300 x 100					24,3	30,1	35,8	46,5	57,0							
300 x 200							45,2	59,1	72,7	84,8	97,1	108,9				
350 x 100								40,5	52,8	64,8						
350 x 250								54,7	71,6	88,4	103,7	119,1	134,1			
400 x 100								45,24	59,07	72,66						
400 x 200								54,7	71,6	88,4	103,7	119,1	134,1			
400 x 300								64,08	84,19	104,06	122,51	141,1	159,18			
500 x 200								64,08	84,19	104,06	122,51	141,1	159,18			
500 x 300								73,5	96,7	119,8	141,3	163,1	184,3			

\* Non-standard sizes that are not listed on the table can be manufactured.

Nominal Weights (kg/m)

All Grades Up to S700 MC
  All Grades Up to S600 MC
  All Grades Up to S500 MC
  All Grades Up to S420 MC

Tensile Test  
Impact Test  
Bending Test  
Chemical Analysis

Samples are taken from raw materials according to ;

Tensile Test : En 10002  
Impact Test : En 10045  
Bending Test : TS 205-1 En ISO 7438

## Quality Control Measurements



### TENSILE TEST

The elongation percentage, yield resistance and tensile resistance properties of hot rolled coils are observed through tensile tests according to standard EN 10025. These properties are the primary definers of steel's grade. With these tests, raw materials' conformity with MTC of coils suppliers are crosschecked.



### CHEMICAL TEST (SPECTROMETER)

Through the spectrometer, hot rolled steel coils are analyzed for their chemical composition and checked for their conformity with the standards according to EN 10025.

### BENDING TEST

The samples taken from the coil are bent to 90 degrees and 120 degrees to confirm their suitability for cold forming.



Prüfbericht							
Matched-bar Impact Test acc. Charpy, EN 10045/1							
Inspection number: 027028	Date of Test: 11-05-2012						
Test number: 0001	Type of Test: Charpy						
Manufacturer: 0001	Plant of the Machine: 0001						
Plate of Test:	Number of Tests: 2						
Machine type: 100							
Disc instrument: 100							
Disc instrument: 100							
Temperature at Test: 100							
Results of Test:							
Order Charge	Order No.	Roll Weight	Roll ID	Roll 2 Weight	Roll 2 ID	Roll 3 Weight	Roll 3 ID
0001	0001	0001	0001	0001	0001	0001	0001
0001	0001	0001	0001	0001	0001	0001	0001
0001	0001	0001	0001	0001	0001	0001	0001
TOLERANCE OF MEASUREMENT: 0,001		Date of Machine: 11-05-2012		Date of Machine: 11-05-2012		Date of Machine: 11-05-2012	

### IMPACT TEST

Through the impact tester, hot rolled steel coils are checked for their impact resistance to ensure conformity with required standards. The tests are done according to EN 10025.



**Destructive Tests**

Flattening Test  
Flaring Test

**Non-Destructive Tests**

For observation and marking of faulty welding areas.

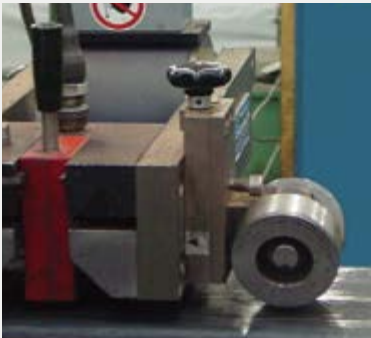
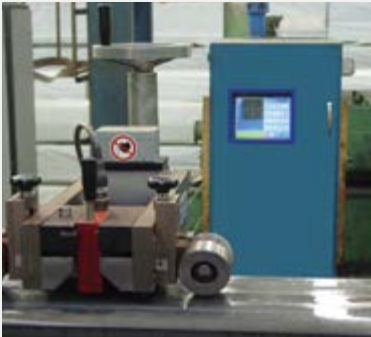
Eddy (Electromagnetic) Test  
Hydrostatic Pressure Test

Samples are taken from products according to ;

Flattening Test :En ISO 8492

Flaring Test : En ISO 8493

Eddy (Electromagnetic) Test :En 10246-3

**EDDY CURRENT**

Through online Eddy check devices, pipes and profiles are examined [EN 10246-3] for inconsistent weld zones and these zones are automatically marked with paint. Any products with inconsistent welding are set aside and classified as non-prime or production loss depending on the severity of the fault.

**FLATTENING AND FLARING TESTS**

Flattening test is done on finished pipe and profile products. In accordance with the relevant standards, pipes and profiles are compressed along the welding line and then again perpendicularly in an attempt to force tear the welding area. The result is then observed for any tearing and/or rupture along the welding line.

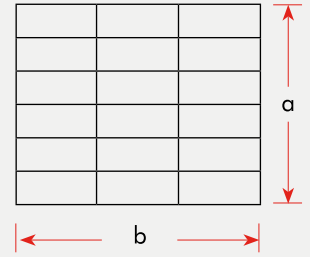
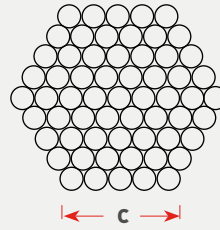
Flaring test is done only on pipes. The pipes' ends are expanded to check weld integrity and the pipes suitability to flaring.

**HYDROSTATIC PRESSURE TEST**

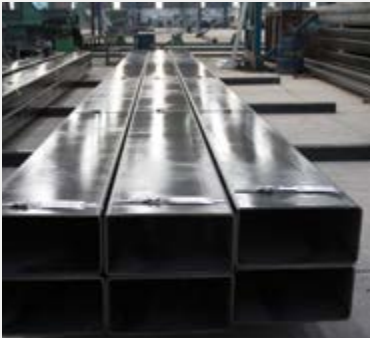
For liquid carrying and/or gas pipes, pressurized liquid is forced into pipes to check the integrity of the welding area. Any pipe failing to pass this test is set aside and classified accordingly.

Standard Packaging Table

Length (meters)	Unwrapped	Wrapped	
	Total straps	inside	outside
$L < 4,00$	4	2	2
$4,00 < L \leq 5,00$	5	2	3
$5,00 < L \leq 6,40$	6	2	4
$6,40 < L \leq 7,32$	7	3	4
$7,32 < L \leq 8,00$	8	3	5
$8,00 < L \leq 9,75$	9	3	6
$9,75 < L \leq 12,20$	10	3	7
$12,20 < L \leq 16,00$	12	4	8
6,00	5	2	3
12,00	6	2	4
$L > 12,0$	8	3	5



a: Number of vertical pieces  
 b: Number of horizontal pieces  
 c: Pieces number of bottom



**BUNDLES**

To best serve the market needs, it possible to make bundles in different forms. Bundles can be prepared according to their weights, shape and/or packaging material on customer demand.



**LABELING**

MMZ's labels contain all the fundemantel details regarding the properties of the packages. Special labeling can be done on request.



**SEMI/COMPLETE JUTE WRAPPING**

Due to the environmental reasons MMZ wraps its products only upon request by the customer. If demanded MMZ wraps its products with standard, jute or water-proof jute. Whether jute wrapped or not all bundles are packed with steel straps. Steel straps quantity depends on the weights of the packages.

# Safe, On Time



## CONTAINER TRANSPORTATION

One of the most efficient ways to transport goods is containerized shipment. Containerized shipment allows low tonnage orders to be transported with relative cost efficiency. Our facilities house special container loading equipment which ensures that the goods are loaded carefully, easily and risk free into the containers.



## TRANSPORTATION

MMZ holds the capability to deliver products to its customer via land transportation. According to customer needs truck, railway or multimodal delivery is possible.



## BULK SHIPMENT

Most suitable for high tonnages, bulk shipment process starts with the proper packing of the materials, suitable for the marine transportation. MMZ's experience in bulk shipment and packaging enables products to be received in best condition and shape.



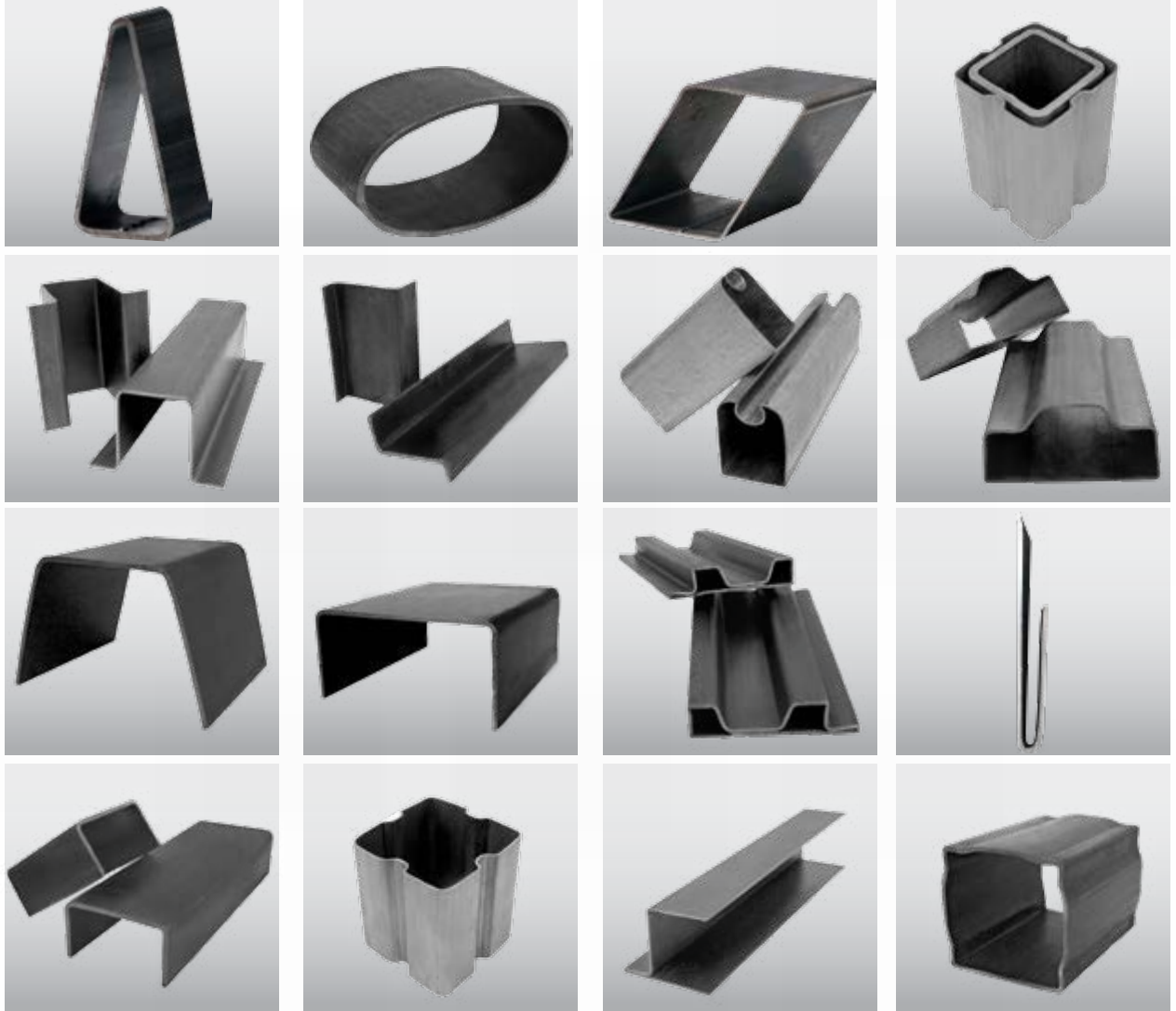
With products for cold formed open sections and custom shapes (U, V, C, J ...), MMZ provides tailor-made products in demanding projects.

Production range:

Unformed Coil Width: Min. 200 mm – Max. 1600 mm  
 Thickness: Min: 2 mm - Max. 16 mm

Production Standard: EN 10162

For more information please visit our website at <http://www.mmz.com.tr>



Standards and Certificates



ISO 9001-2008

CE 2195-CPD-1210401



TSE 14.1134/TSE-63830



ISO 9001-2008 NO: 34987



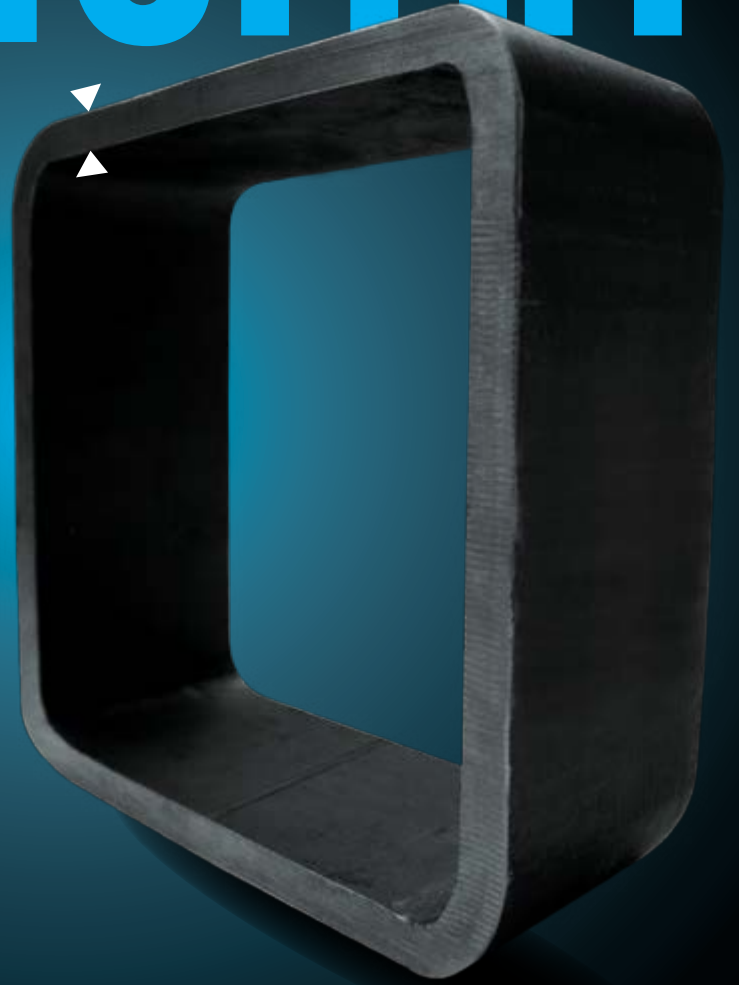


Industrial Breakthrough  
in Construction Steel

The first manufacturer in  
**Turkish industry**

Strong R&D  
HIGH GRADE STEEL

# 16mm



Your Solution Partner in Steel

 **MMZ** Pipes | Profiles

**MMZ**

MMZ ONUR BORU PROFİL ÜRETİM SANAYİ VE TİC. A.Ş.

Head Office  
Sarıkanarya Sk. No:16 Yolbulan Plaza  
B Blok Kat:3 34742 Kozyatağı  
Kadıköy - İstanbul / TÜRKİYE

T: +90 216 463 6996  
F: +90 216 463 7031

info@mmz.com.tr



Factory  
Ayazlı Mh. Ereğli 2. Cadde  
No:182 81650 Akcakoca  
Düzce / TÜRKİYE

T: +90 380 618 7070  
F: +90 380 618 7071

export@mmz.com.tr

[www.mmz.com.tr](http://www.mmz.com.tr)