

# Schematic "Family tree" of hydrogen susceptibility of stainless steels

Increasing hydrogen resistance RRA

590	<b>1.4435</b>				590	<b>1.4636</b>				A
230	X2CrNiMo18-14-3/316L				230	X4CrMnNiCu18-13-8-3				
100					100					
C	Mn	Cr	Mo		C	Mn	Cr	Ni	Cu	
		17,0	2,5		10,0	16,0	6,0	2,0	2,0	
0,03	2,00	19,0	3,0		0,07	15,0	20,0	10,0	4,0	

930	<b>1.3964</b>				A/CW
725	X2CrNiMoNb21-15-5-3/XM-19				
100					
C	Mn	Cr	Mo	Ni	
	4,00	20,0	2,5	17,0	
0,03	6,00	21,5	3,0	15,0	

1035	<b>Magnadur 601</b>				A/CW
965	X3MnCrNiMoN19-16-5-3				
100					
C	Mn	Cr	Mo	Ni	
	18,00	15,5	2,0	4,2	
0,05	20,00	17,5	2,8	5,0	

590	<b>1.4401</b>				A
230	X5CrNiMo17-12-2/316				
98					
C	Mn	Cr	Mo	Ni	
		16,5	2,0	10,0	
0,07	2,00	18,5	2,5	13,0	

425	<b>1.4005</b>				M
400	X12CrS13				
98					
C	Mn	Cr	S	Ni	
0,06		12,0	0,15	4,0	
0,15	1,00	14,0	0,35	6,0	

970	<b>1.4418</b>				M
830	X4CrNiMo16-5-1				
94					
C	Mn	Cr	Mo	Ni	
		15,0	0,8	4,0	
0,06	1,50	17,0	1,5	6,0	

525	<b>1.4003</b>				F
260	X12CrNi12				
88					
C	Mn	Cr	Mo	Ni	
		10,5		0,3	
0,03	1,50	12,5		1,0	

910	<b>1.4410</b>				D
740	X2CrNiMoN25-7-4/Alloy 2507				
54					
C	Mn	Cr	Mo	Ni	
		24,0	3,0	6,0	
0,03	2,00	26,0	4,5	8,0	

1520	<b>1.4006</b>				M
1320	X10Cr14/410				
20					
C	Mn	Cr	Mo	Ni	
		11,5			
0,08		13,5		0,8	
0,15	1,50				

650	<b>1.4307</b>				A
210	X2CrNi18-9/304L				
45					
C	Mn	Cr	Mo	Ni	
		17,0		8,0	
0,03	2,00	19,0		10,5	

970	<b>1.4418</b>				M
830	X4CrNiMo16-5-1				
20					
C	Mn	Cr	Mo	Ni	
		15,0	0,8	4,0	
0,06	1,50	17,0	1,5	6,0	

1200	<b>1.4568</b>				Marag
1120	X7CrNiAl17-7				
6					
C	Mn	Cr	Al	Ni	
		16,0	0,7	6,5	
0,09	1,00	18,0	1,5	7,5	

2162	<b>1.4034</b>				M
1250	X46Cr13				
18					
C	Mn	Cr	Mo	Ni	
		12,5			
0,43		14,5			
0,50	1,00				

a. R<sub>m</sub>  
b. R<sub>p0,2</sub>  
c. RRA  
d. Material number  
e. Grade  
f. Structure / condition

a	<b>1.DDDD</b>				f
b	eeee				
c	C	Mn	Cr	Mo	Ni
	min				
	max				

RRA = Relative Reduction of Area

## Hydrogen pressure

- < 50 bar
- < 100 bar
- ≥ 100 bar

$$RRA = \frac{Z_{H_2}}{Z_{Ref.}} \times 100\%$$