Tubos de Acero de México, S
Carr. Mty-Laredo Km 24.2
Apartado Postal 43
(65550) C. de Flores, N.L. M
(52) 81 8305 9600 tel
(52) 81 8305 9620 fax

Tenaris

CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204:2004E - ISO 10474: 2013 3.1.B)

Numero: Number:	Pagina/Page:
33283	1

Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: Customers Order No: 29639 - 29242

Lista de Empaque: Packing List: 18665

Fecha/Date: 26 de agosto de

Especificaciones y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM A 234 WPB-19e
Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB

Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 - 2018

Factura/Invoice:
Bocas / Ends
Biselado / Bevelled ends

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION

PRUEBAS MECANICAS / MECHANICAL TEST

PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROME AVERA Joule
1	T13863	120	CODO 4 X 90° R.L. CED-STD	345	492	34	150					
2	T13867	70	CODO 3 X 90° R.L. CED-STD	360	506	39	152					
3	T13584	110	TEE 4 CED-STD	360	478	33	132					
4	T13582	160	CODO 3 X 90° R.L. CED-XS	346	488	38	145					
5	T31149	30	RED. CONC. 10 X 8 CED-STD	460	481	43	170					
6	T13588	100	CODO 3 X 45° CED-STD	352	503	37	141					
7	S44314	150	CODO 2 X 45° CED-STD	336	496	30	130					
8	T30287	30	RED. CONC. 8 X 6 CED-STD	340	492	30	130					
9	T32404	12	CODO 14 X 45° CED-STD	276	473	36	141					
10	T13866	72	CODO 8 X 90° R.L. CED-XS	341	484	40	149					
11	T13587	40	CODO 2 1/2 X 90° R.L. CED-STD	366	506	36	179					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T13863	13863	0.310	0.170	0.790	0.007	0.002	0.310	0.020	0.040	0.000	0.020	0.004	0.000
HF	T13867	13867	0.320	0.180	0.780	0.005	0.002	0.280	0.010	0.030	0.000	0.020	0.003	0.000
HF	T13584	13584	0.310	0.170	0.790	0.006	0.003	0.280	0.020	0.050	0.000	0.020	0.003	0.000
HF	T13582	13582	0.310	0.170	0.780	0.007	0.003	0.290	0.030	0.060	0.010	0.030	0.002	0.000
CF	T31149	31149	0.300	0.170	0.670	0.010	0.001	0.270	0.060	0.060	0.020	0.030	0.002	0.000
HF	T13588	13588	0.320	0.180	0.780	0.006	0.003	0.290	0.020	0.050	0.000	0.020	0.003	0.000
HF	S44314	44314	0.350	0.200	0.760	0.010	0.002	0.300	0.050	0.050	0.030	0.029	0.002	0.000
CF	T30287	30287	0.310	0.170	0.660	0.010	0.003	0.260	0.090	0.060	0.030	0.050	0.002	0.000
HF	T32404	32404	0.310	0.180	0.660	0.008	0.002	0.270	0.050	0.060	0.030	0.040	0.002	0.000
HF	T13866	13866	0.310	0.170	0.780	0.005	0.002	0.290	0.010	0.040	0.000	0.020	0.002	0.000
HF	T13587	13587	0.320	0.180	0.780	0.006	0.003	0.290	0.020	0.040	0.000	0.020	0.003	0.000

Certificamos que los resultados de los Análisis Químicos y Pruebas Mecánicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el prove

de Materia Prima (Tubería Sin Costura) conforme ASTM A106 Grado B con Nº:

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or suplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº:

19054562 19066668 19048580 19042725 19046199 190
17048941 19048676 19058166 20017612 19044078

"Este material cumple con los requerimientos especificados en la orden".

"The material of this certificate heat number mentioned above is in compilance with the requirements specified in the order".

Notas:
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.
Tiempo de permanencia 10'.
Inspección Dimensional: Satisfactoria.
HF: FORMADO EN CALIENTE/HOT FORMED

Notes:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.
Cold formed nomalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

Quality Manager/Jefe de Calidad:
ING. ANA GABRIELA VAZQUEZ MAYORAL

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting./ The values of hardness for fittings NPS 2 1/2" and smaller ones obtai from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.

Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.

MATERIAL ACCORDING TO NACE MR0175/ISO 15156, 2015 AND NACE MR0103,2015 ONLY HARDNESS

FOR

Tenaris

Tubos de Acero de México, S
Carr. Mty-Laredo Km 24.2
Apartado Postal 43
(65550) C. de Flores, N.L. Me
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CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204:2004E - ISO 10474: 2013 3.1.B)

Numero: Number:	Pagina/Page:
33284	2

Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: Customers Order No: 29242 - 29639

Lista de Empaque: Packing List: 18665

Fecha/Date: 26 de agosto de

Especificaciones y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM A 234 WPB-19e
Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB

Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 - 2018

Factura/Invoice:
Bocas / Ends
Biselado / Bevelled ends

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joule
12	T96801	36	CODO 10 X 45° CED-STD	304	475	30	158					
13	T95586	36	CODO 10 X 45° CED-STD	337	496	32	138					
14	T31147	36	CODO 12 X 45° CED-STD	310	492	31	155					
15	T13587	96	CODO 2 1/2 X 45° CED-STD	366	506	36	179					
16	T96924	5	RED. CONC. 14 X 10 CED-STD	248	421	36	154					
17	T96571	40	CODO 5 X 90° R.C. CED-STD	281	467	34	142					
18	S74455	60	CODO 1 1/2 X 45° CED-XS	322	487	32	122					
19	D91564	5	RED. CONC. 16 X 14 CED-STD	304	468	36	132					
20	T98742	4	TEE RED. 10 X 4 CED-STD	356	472	38	144					
21	T31601	19	TEE RED. 6 X 4 CED-XS	349	483	34	153					
22	T96802	1	TEE RED. 6 X 4 CED-XS	346	471	34	142					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T96801	96801	0.310	0.170	0.670	0.010	0.002	0.280	0.060	0.070	0.020	0.040	0.002	0.000
HF	T95586	95586	0.330	0.170	0.800	0.008	0.002	0.270	0.050	0.080	0.020	0.040	0.003	0.000
HF	T31147	31147	0.310	0.170	0.670	0.008	0.000	0.260	0.060	0.100	0.050	0.040	0.002	0.000
HF	T13587	13587	0.320	0.180	0.780	0.006	0.003	0.290	0.020	0.040	0.000	0.020	0.003	0.000
CF	T96924	96924	0.320	0.180	0.690	0.011	0.002	0.290	0.040	0.078	0.021	0.040	0.002	0.000
HF	T96571	96571	0.310	0.180	0.670	0.010	0.002	0.270	0.050	0.059	0.026	0.030	0.002	0.000
HF	S74455	74455	0.330	0.180	0.760	0.018	0.001	0.290	0.050	0.050	0.020	0.023	0.002	0.002
CF	D91564	91564	0.350	0.170	0.810	0.011	0.003	0.190	0.120	0.090	0.030	0.070	0.002	0.000
HF	T98742	98742	0.310	0.170	0.680	0.007	0.004	0.280	0.050	0.050	0.030	0.040	0.002	0.000
HF	T31601	31601	0.310	0.170	0.670	0.011	0.001	0.260	0.060	0.070	0.030	0.030	0.002	0.000
HF	T96802	96802	0.300	0.170	0.660	0.010	0.002	0.280	0.050	0.068	0.020	0.040	0.002	0.000

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecánicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el prove de Materia Prima (Tubería Sin Costura) conforme ASTM A106 Grado B con Nº:

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or suplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº:

19029276 19030334 20018799 19044078 19002890 1806
16011033 19035016 19030332 20006193 18069375

"Este material cumple con los requerimientos especificados en la orden".

"The material of this certificate heat number mentioned above is in compilance with the requirements specified in the order".

Notas:
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.
Tiempo de permanencia 10'.
Inspección Dimensional: Satisfactoria.
HF: FORMADO EN CALIENTE/HOT FORMED

Notes:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air,
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

Quality Manager/Jefe de Calidad:
ING. ANA GABRIELA VAZQUEZ MAYORAL

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting./ The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.
Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.
MATERIAL ACCORDING TO NACE MR0175/ISO 15156, 2015 AND NACE MR0103,2015 ONLY HARDNESS

FOR0

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Tenaris

CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204:2004E - ISO 10474: 2013 3.1.B)

Numero: Number:	Pagina/Page:
33285	3

Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 29639	Lista de Empaque: Packing List: 18665	Fecha/Date: 26 de agosto de
Especificaciones y Grados / Standard or Specification and Steel Grade **Seamless Fittings according to ASTM A 234 WPB-19e** **Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB**	Dimensiones y tolerancias / Dimension and tolerances **ASME B 16.9 - 2018**	**Factura/Invoice:** **Bocas / Ends** Biselado / Bevelled ends	

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROME AVERA Joule
23	T31601	20	RED. CONC. 8 X 6 CED-XS	296	471	43	153					
24	S43944	60	CODO 1 1/4 X 45° CED-STD	340	517	39	114					
25	S43944	432	CODO 1 1/2 X 45° CED-STD	340	517	39	114					
26	T31149	15	TEE RED. 8 X 4 CED-STD	355	474	38	141					
27	T99152	5	TEE RED. 8 X 4 CED-STD	301	454	38	149					
28	T93218	4	TEE RED. 10 X 8 CED-80	270	416	38	136					
29	T13582	86	CODO 3 X 45° CED-XS	346	488	38	145					
30	T99270	14	CODO 3 X 45° CED-XS	332	482	39	146					
31	S23210	120	CODO 2 X 45° CED-XS	322	485	28	126					
32	T98371	4	TEE 12 CED-80	240	440	43	134					
33	T31508	2	RED. CONC. 12 X 6 CED-80	364	502	37	157					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
CF	T31601	31601	0.310	0.170	0.670	0.011	0.001	0.260	0.060	0.070	0.030	0.030	0.002	0.000
HF	S43944	43944	0.320	0.180	0.750	0.007	0.000	0.320	0.050	0.050	0.010	0.021	0.002	0.004
HF	S43944	43944	0.320	0.180	0.750	0.007	0.000	0.320	0.050	0.050	0.010	0.021	0.002	0.004
HF	T31149	31149	0.300	0.170	0.670	0.010	0.001	0.270	0.060	0.060	0.020	0.030	0.002	0.000
HF	T99152	99152	0.300	0.170	0.670	0.007	0.002	0.260	0.040	0.060	0.040	0.020	0.002	0.000
HF	T93218	93218	0.320	0.190	0.680	0.006	0.002	0.270	0.030	0.063	0.011	0.030	0.002	0.000
HF	T13582	13582	0.310	0.170	0.780	0.007	0.003	0.290	0.030	0.060	0.010	0.030	0.002	0.000
HF	T99270	99270	0.310	0.170	0.670	0.005	0.002	0.280	0.050	0.070	0.030	0.040	0.003	0.000
HF	S23210	23210	0.340	0.190	0.770	0.010	0.001	0.300	0.050	0.050	0.010	0.023	0.005	0.001
HF	T98371	98371	0.320	0.180	0.670	0.010	0.002	0.300	0.060	0.070	0.020	0.040	0.002	0.000
CF	T31508	31508	0.310	0.180	0.660	0.007	0.001	0.260	0.050	0.060	0.020	0.030	0.002	0.000

Certificamos que los resultados de los Análisis Químicos y Pruebas Mecánicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el prove

de Materia Prima (Tubería Sin Costura) conforme ASTM A106 Grado B con Nº:

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or suplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº:

20006193 17050166 17050166 19046199 19017994 1804
19042725 19044106 19009248 19023400 19058364

"Este material cumple con los requerimientos especificados en la orden".

"The material of this certificate heat number mentioned above is in compilance with the requirements specified in the order".

Notas:
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.
Tiempo de permanencia 10'.
Inspección Dimensional: Satisfactoria.
HF: FORMADO EN CALIENTE/HOT FORMED

Notes:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air,
Cold formed nomalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

Quality Manager/Jefe de Calidad:
ING. ANA GABRIELA VAZQUEZ MAYORAL

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting./ The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.
Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.
MATERIAL ACCORDING TO NACE MR0175/ISO 15156, 2015 AND NACE MR0103,2015 ONLY HARDNESS

FOR03

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Tenaris

CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204:2004E - ISO 10474: 2013 3.1.B)

Numero: Number: 33286 | Pagina/Page: 4

Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: Customers Order No: 29639 - 29242 -

Lista de Empaque: Packing List: 18665

Fecha/Date: 26 de agosto de

Especificaciones y Grados / Standard or Specification and Steel Grade

Seamless Fittings according to ASTM A 234 WPB-19e

Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB

Dimensiones y tolerancias / Dimension and tolerances

ASME B 16.9 - 2018

Factura/Invoice:

Bocas / Ends

Biselado / Bevelled ends

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION

PRUEBAS MECANICAS / MECHANICAL TEST

PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROME AVERA Joule
34	T31602	5	TEE 5 CED-XS	302	465	41	116					
35	T72971	2	TEE 5 CED-XS	319	470	32	145					
36	T39932	50	CODO 1 X 45° CED-STD	282	448	51	114					
37	T31148	10	TEE RED. 8 X 4 CED-XS	294	491	36	143					
38	T78169	2	RED. CONC. 12 X 8 CED-40	265	420	36	140					
39	T95484	2	RED. CONC. 12 X 8 CED-40	329	483	45	120					
40	T32405	24	CODO 12 X 90° R.L. CED-80	337	475	37	152					
41	T94442	4	TEE RED. 12 X 6 CED-STD	291	442	38	136					
42	T13866	60	CODO 8 X 45° CED-XS	341	484	40	149					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T31602	31602	0.290	0.160	0.660	0.011	0.000	0.260	0.050	0.060	0.020	0.030	0.001	0.000
HF	T72971	72971	0.310	0.180	0.670	0.007	0.001	0.300	0.040	0.080	0.015	0.040	0.000	0.000
HF	T39932	39932	0.280	0.160	0.540	0.015	0.002	0.180	0.080	0.104	0.016	0.040	0.000	0.000
HF	T31148	31148	0.320	0.180	0.660	0.008	0.001	0.260	0.080	0.080	0.040	0.040	0.002	0.000
CF	T78169	78169	0.310	0.180	0.660	0.007	0.002	0.280	0.040	0.063	0.013	0.030	0.000	0.000
CF	T95484	95484	0.300	0.170	0.670	0.007	0.002	0.290	0.040	0.060	0.030	0.030	0.001	0.000
HF	T32405	32405	0.310	0.180	0.670	0.010	0.001	0.270	0.050	0.050	0.030	0.030	0.001	0.000
HF	T94442	94442	0.300	0.170	0.680	0.011	0.001	0.280	0.050	0.073	0.020	0.030	0.002	0.000
HF	T13866	13866	0.310	0.170	0.780	0.005	0.002	0.290	0.010	0.040	0.000	0.020	0.002	0.000

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el prove

de Materia Prima (Tuberia Sin Costura) conforme ASTM A106 Grado B con Nº:

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or suplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº:

19052759 15000972 F00016324 19050979 15029457 1900
20007595 18059807 20017612

"Este material cumple con los requerimientos especificados en la orden".

"The material of this certificate heat number mentioned above is in compilance with the requirements specified in the order".

Notas:

Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.

Tiempo de permanencia 10'.

Inspección Dimensional: Satisfactoria.

HF: FORMADO EN CALIENTE/HOT FORMED

Notes:

Hot formed fittings in a range from 620°C to 980°C, cooled in still air.

Cold formed nomalized at 940°C max.

Holding time 10'.

Visual dimensional check: Satisfactory

CF: FORMADO EN FRIO/COLD FORMED

Quality Manager/Jefe de Calidad:
ING. ANA GABRIELA VAZQUEZ MAYORAL

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting./ The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.

Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.

MATERIAL ACCORDING TO NACE MR0175/ISO 15156, 2015 AND NACE MR0103,2015 ONLY HARDNESS

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