DEACERO®

EXCELENCIA EN CALIDAD

Acería Celaya
Carretera 45 Panamericana Km 64.8 Poblado el Chinaco
C.P./ZIP 38260 MPIO. VILLAGRAN, GUANAJUATO
Tel/Phone (+52) 01 818 368 1111
MX 01 800 021 3322, USA 1800 332 2376

DECLARACIÓN DE CONFORMIDAD DE BARRAS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZ DE CONCRETO /

Análisis Químico / Chemical Analysis (% Peso / Weight)

Colada / Heat	Secuencia / Sequence	Clave / Code	Producto / Description of Goods	% C AVG	% Mn AVG	% Si AVG	% P AVG	% S AVG	% Cu AVG	% Cr AVG	% Ni AVG	% Mo AVG	% V AVG	% Nb AVG	CE AVG
137227	129549	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.262	0.962	0.154	0.008	0.024	0.186	0.129	0.080	0.018	0.040	0.003	0.439 9
37228	129545	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.249	0.966	0.112	0.009	0.022	0.218	0.132	0.074	0.016	0.040	0.003	0.428 5
37228	129550	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.249	0.966	0.112	0.009	0.022	0.218	0.132	0.074	0.016	0.040	0.003	0.428 5
38243	129561	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.965	0.130	0.007	0.021	0.183	0.110	0.066	0.015	0.042	0.004	0.422 0
38244	129560	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.964	0.122	0.008	0.018	0.213	0.119	0.069	0.016	0.041	0.005	0.421 1
38245	129559	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.981	0.151	0.011	0.021	0.209	0.143	0.070	0.017	0.041	0.005	0.426 1
38246	129558	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.243	0.954	0.148	0.009	0.018	0.189	0.120	0.066	0.013	0.040	0.004	0.418 3
38247	129557	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.997	0.144	0.009	0.023	0.188	0.107	0.067	0.017	0.042	0.004	0.426 7
38248	129556	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.960	0.150	0.008	0.019	0.198	0.114	0.064	0.016	0.041	0.004	0.419 2
38249	129555	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.243	0.969	0.166	0.008	0.016	0.202	0.110	0.062	0.016	0.042	0.004	0.419 7
38250	129533	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.242	0.970	0.153	0.008	0.021	0.202	0.131	0.066	0.016	0.040	0.005	0.420 8
38251	129554	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.979	0.157	0.007	0.029	0.210	0.112	0.066	0.017	0.040	0.005	0.425 4
38252	129552	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.245	0.988	0.146	0.007	0.021	0.198	0.116	0.064	0.017	0.042	0.005	0.425 2
38252	129553	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.245	0.988	0.146	0.007	0.021	0.198	0.116	0.064	0.017	0.042	0.005	0.425 2
38253	129551	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.248	0.960	0.161	0.009	0.025	0.225	0.110	0.068	0.019	0.042	0.004	0.424 4
38254	129547	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.250	0.953	0.184	0.010	0.019	0.202	0.129	0.062	0.019	0.042	0.004	0.426 3
38255	129534	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.241	0.982	0.198	0.009	0.022	0.202	0.135	0.061	0.017	0.041	0.005	0.42 2
38256	129543	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.250	0.958	0.163	0.009	0.020	0.198	0.111	0.066	0.019	0.041	0.004	0.42 2
38257	129542	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.258	0.952	0.151	0.008	0.023	0.192	0.112	0.064	0.018	0.040	0.004	0.4 8
138258	129541	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.253	0.954	0.179	0.008	0.013	0.207	0.132	0.064	0.017	0.042	0.004	0.4
138259	129540	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.256	0.950	0.178	0.009	0.016	0.211	0.135	0.067	0.017	0.044	0.004	0.4

DEACERO +VERDE

Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglament barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de l propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to stanc applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records ir with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015
NO. 2021CRE-895
CERTIFICADO DESDE 2021-01-08

DEACERO®

EXCELENCIA EN CALIDAD

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MX 01 800 021 3322, USA 1800 332 2376

DECLARACIÓN DE CONFORMIDAD DE BARRAS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

No. Certificado / Certificate No:	18426 - 24327607 - 7
Fecha / Date:	25/01/2023

Hecho en México / Made in Mexico

Análisis Químico / Chemical Analysis (% Peso / Weight)

Colada / Heat	Secuencia / Sequence	Clave / Code	Producto / Description of Goods	% C AVG	% Mn AVG	% Si AVG	% P AVG	% S AVG	% Cu AVG	% Cr AVG	% Ni AVG	% Mo AVG	% V AVG	% Nb AVG	CE AVG
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137228	129545	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.249	0.966	0.112	0.009	0.022	0.218	0.132	0.074	0.016	0.040	0.003	0.428 5
137228	129550	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.249	0.966	0.112	0.009	0.022	0.218	0.132	0.074	0.016	0.040	0.003	0.428 5
138243	129561	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.965	0.130	0.007	0.021	0.183	0.110	0.066	0.015	0.042	0.004	0.422 0
138244	129560	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.964	0.122	0.008	0.018	0.213	0.119	0.069	0.016	0.041	0.005	0.421 1
138245	129559	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.981	0.151	0.011	0.021	0.209	0.143	0.070	0.017	0.041	0.005	0.426 1
138246	129558	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.243	0.954	0.148	0.009	0.018	0.189	0.120	0.066	0.013	0.040	0.004	0.418 3
138247	129557	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.997	0.144	0.009	0.023	0.188	0.107	0.067	0.017	0.042	0.004	0.426 7
138248	129556	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.244	0.960	0.150	0.008	0.019	0.198	0.114	0.064	0.016	0.041	0.004	0.419 2
138249	129555	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.243	0.969	0.166	0.008	0.016	0.202	0.110	0.062	0.016	0.042	0.004	0.419 7
138250	129533	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.242	0.970	0.153	0.008	0.021	0.202	0.131	0.066	0.016	0.040	0.005	0.420 8
138251	129554	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.246	0.979	0.157	0.007	0.029	0.210	0.112	0.066	0.017	0.040	0.005	0.425 4
138252	129552	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.245	0.988	0.146	0.007	0.021	0.198	0.116	0.064	0.017	0.042	0.005	0.425 2
138252	129553	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.245	0.988	0.146	0.007	0.021	0.198	0.116	0.064	0.017	0.042	0.005	0.425 2
138253	129551	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.248	0.960	0.161	0.009	0.025	0.225	0.110	0.068	0.019	0.042	0.004	0.424 4
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138256	129543	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.250	0.958	0.163	0.009	0.020	0.198	0.111	0.066	0.019	0.041	0.004	0.425 2
138257	129542	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.258	0.952	0.151	0.008	0.023	0.192	0.112	0.064	0.018	0.040	0.004	0.431 8
138258	129541	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.253	0.954	0.179	0.008	0.013	0.207	0.132	0.064	0.017	0.042	0.004	0.430 0
138259	129540	11833	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	0.256	0.950	0.178	0.009	0.016	0.211	0.135	0.067	0.017	0.044	0.004	0.432 3

DEACERO +VERDE

Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglamento técnico de barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de las propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la compañía, cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to standards applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records in compliance with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015
NO. 2021CRE-895
CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Quality Assurance Manager

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EXCELENCIA EN CALIDAD

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DECLARACIÓN DE CONFORMIDAD DE BARRAS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

No. Certificado / Certificate No:	18426 - 24327607 - 7
Fecha / Date:	25/01/2023

Hecho en México / Made in Mexico

Propiedades Mecánicas / Mechanical Properties

Colada / Heat	Secuencia / Sequence	Producto / Description of Goods	Grado / Steel Grade	Calibre / Diameter	Cantidad / Quantity	RT kg/mm²	TS MPa	% Elong / Elong	LF kg/mm²	YS MPa	RT/LF	P. Doblez / Bend Test	Acabado	Peso metro (Kg/m)	Máx. Espaciamiento	Min. Altura	Separación Extr. Resaltes
						AVG	AVG	AVG	AVG	AVG			Punto 11 de la Norma NTC2289 /	AVG	AVG	AVG	AVG
8243	129561	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	43	67.80	664.95	14.80	46.32	454.29	1.46	Cumple / Successfully	CUMPLE	0.56	6.20	0.46	1.50
8244	129560	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	80	68.84	675.09	14.78	47.14	462.34	1.46	Cumple / Successfully	CUMPLE	0.55	6.15	0.51	1.45
8245	129559	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	71	68.21	668.98	16.12	47.88	469.59	1.42	Cumple / Successfully	CUMPLE	0.55	6.20	0.49	2.30
8246	129558	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	52	66.12	648.44	15.95	46.30	454.13	1.42	Cumple / Successfully	CUMPLE	0.56	6.20	0.48	2.30
8247	129557	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	59	68.82	674.92	15.08	43.57	427.27	1.57	Cumple / Successfully	CUMPLE	0.55	6.13	0.51	2.17
8248	129556	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	55	66.88	655.95	16.35	46.58	456.84	1.43	Cumple / Successfully	CUMPLE	0.55	6.17	0.51	2.20
8249	129555	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	67	66.82	655.32	17.48	46.26	453.67	1.44	Cumple / Successfully	CUMPLE	0.55	6.17	0.60	2.16
8250	129533	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	67	67.45	661.54	14.82	46.24	453.48	1.45	Cumple / Successfully	CUMPLE	0.56	5.98	0.66	1.46
8251	129554	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	79	66.85	655.65	16.65	47.77	468.54	1.39	Cumple / Successfully	CUMPLE	0.55	6.20	0.45	2.18
8252	129552	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	46	67.29	659.92	15.81	45.98	450.99	1.46	Cumple / Successfully	CUMPLE	0.56	6.20	0.65	2.20
8252	129553	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	76	67.15	658.54	14.82	45.98	450.99	1.46	Cumple / Successfully	CUMPLE	0.56	6.20	0.65	2.30
8253	129551	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	71	67.81	665.07	14.72	44.53	436.75	1.52	Cumple / Successfully	CUMPLE	0.56	6.15	0.64	2.30
8254	129547	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	82	68.82	674.93	15.00	46.34	454.46	1.48	Cumple / Successfully	CUMPLE	0.56	6.20	0.62	2.39
8255	129534	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	78	68.36	670.45	14.61	47.08	461.73	1.45	Cumple / Successfully	CUMPLE	0.56	6.10	0.67	1.47
8256	129543	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	74	66.56	652.74	16.27	45.94	450.51	1.44	Cumple / Successfully	CUMPLE	0.55	6.36	0.56	2.31
8257	129542	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	69	65.17	639.11	17.16	48.72	477.84	1.33	Cumple / Successfully	CUMPLE	0.55	6.49	0.53	2.18
8258	129541	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	82	68.45	671.28	15.22	47.03	461.28	1.45	Cumple / Successfully	CUMPLE	0.56	6.36	0.44	2.25
8259	129540	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	59	69.28	679.45	15.34	50.40	494.30	1.37	Cumple / Successfully	CUMPLE	0.56	6.59	0.55	2.16
8260	129538	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	81	69.72	683.80	14.92	46.62	457.18	1.49	Cumple / Successfully	CUMPLE	0.56	6.04	0.58	1.46
8260	129539	ALAMBRON CORRUGADO DA- 2289 G60 C2 3/8" 1.4T C	G60	3/8"	37	65.99	647.13	14.98	47.82	469.00	1.37	Cumple / Successfully	CUMPLE	0.56	6.11	0.59	2.10

DEACERO +VERDE

Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglamento técnico de barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de las propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la compañía, cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to standards applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records in compliance with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015
NO. 2021CRE-895
CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Quality Assurance Manager

GRUPO SIDERÚRGICO REYNA

NIT 900.601.327-7

DECLARACIÓN DE CONFORMIDAD DE CALIDAD

BARRAS PARA REFUERZO DE CONCRETO

NUESTRO ACERO SISMORRESISTENTE CUMPLE CON LA NORMA TÉCNICA COLOMBIANA NTC 2289

icontec Sello de Calidad — NTC 2289:2020 Barras corrugadas de acero de baja aleación para refuerzo de concreto

icontec Sello con Reglamento Técnico — Res 1856:2017 Barras corrugadas de acero de baja aleación para refuerzo de concreto

No. 046715

FECHA: DD/MM/AA
3/04/2023

CLIENTE	G&J FERRETERIAS S.A.	DESTINO	TUNJA
		VEHÍCULO No.	XIE 398

PEDIDO No.	21513
REMISIÓN No.	21520
FACTURA No.	66230

					ENSAYOS FÍSICOS					COMPOSICIÓN QUÍMICA % Max.												DIMENSIONES DE PROCESO			
						ENSAYOS DE TRACCIÓN																			
PRODUCTO	LONGITUD (metros)	COLADA	PAQUETES	UNIDADES	DOBLADO	FLUENCIA (Mpa)	RESISTENCIA (Mpa)	ELONGACIÓN (%)	R/F	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)	Ni (%)	Cr (%)	Mo (%)	Nb (%)	V (%)	CE (%)	PESO METRO (kg/m)	ALTURA RESALTE (mm)	ESPACIAMIENTO (mm)	ANCHO DE VENAS (mm)
R - No. 8	12	20230686	13	714	✓	489.7	642.6	14.2	1.31	0.26	1.01	0.0099	0.034	0.18	0.23	0.07	0.09	0.022	0.00025	0.0020	0.44	3.925	2.100	16.950	4.140
		20230684	4		✓	487.1	646.3	14.0	1.33	0.27	0.95	0.0102	0.038	0.18	0.18	0.08	0.05	0.020	0.00044	0.0019	0.44	3.925	2.110	16.950	4.140
ESPECIFICACIONES DE NORMA																									
R - No. 8						[420 - 540]	Min: 550	Min. 12	Min: 1.25	Max: 0.30	Max: 1.50	Max: 0.035	Max: 0.045	Max: 0.50							Max: 0.55	[3.735 - 3.973]	Min: 1.27	Max: 17.8	Max: 9.7

OBSERVACIONES

ANÁLISIS DE COMPOSICIÓN QUÍMICA DE COLADA

CE: CARBONO EQUIVALENTE

"EL MATERIAL DESPACHADO SE ENCUENTRA LIBRE DE CONTAMINACIÓN RADIACTIVA-EXTRAPOLARIUM SRPM -210"

DIRECTOR CALIDAD

02/08/2021 Ver. 02 CCA-FOR-013

Enviado: impuestos@gyj.com.co,analista.compras@gyj.com.co,sso@gyj.com.co,aprendiz.calidad@gyj.com.co,

DEACERO®

EXCELENCIA EN CALIDAD

Acería Celaya
Carretera 45 Panamericana Km 64.8 [illegible]do el Chinaco
C.P./ZIP 38260 MPIO. VILLAGRAN, GUANAJUATO
Tel/Phone (+52) 01 818 368 1111
MX 01 800 021 3322, USA 1800 332 2376

DECLARACIÓN DE CONFORMIDAD DE [illegible] CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

[illegible]. Certificado / Certificate No:	18602 - 24370628 - 7
Fecha / Date:	23/02/2023

Hecho en México / Made in Mexico

Análisis Químico / Chemical Analysis (% Peso / Weight)

Colada / Heat	Secuencia / Sequence	Clave / Code	Producto / Description of Goods	% C AVG	% Mn AVG	% Si AVG	% P AVG	% S AVG	% Cu AVG	% Cr AVG	% Ni AVG	% Mo AVG	% V AVG	% Nb AVG	CE AVG
139730	184394	23824	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	0.283	0.980	0.136	0.007	0.025	0.239	0.100	0.081	0.020	0.002	0.005	0.4668
139731	184395	23824	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	0.264	0.997	0.122	0.007	0.014	0.228	0.103	0.077	0.020	0.003	0.005	0.4495
139732	184396	23824	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	0.286	0.992	0.128	0.007	0.016	0.245	0.093	0.081	0.021	0.002	0.006	0.4708
139733	184397	23824	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	0.286	1.012	0.125	0.009	0.026	0.222	0.086	0.087	0.021	0.002	0.006	0.4736
139734	184398	23824	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	0.273	0.986	0.128	0.009	0.025	0.227	0.087	0.085	0.020	0.002	0.006	0.4560
139922	153289	23841	VARILLA DA- 2289 G60 C2 7/8" 10.0m P77 R	0.289	0.985	0.140	0.008	0.019	0.248	0.081	0.079	0.020	0.002	0.005	0.4708
139923	153288	23841	VARILLA DA- 2289 G60 C2 7/8" 10.0m P77 R	0.262	1.002	0.141	0.010	0.032	0.245	0.087	0.073	0.019	0.003	0.005	0.4470
129531	142757	23838	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	0.265	0.988	0.155	0.008	0.027	0.261	0.099	0.086	0.018	0.004	0.003	0.4506
139923	153287	23838	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	0.262	1.002	0.141	0.010	0.032	0.245	0.087	0.073	0.019	0.003	0.005	0.4470
139924	153286	23838	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	0.264	0.993	0.133	0.010	0.022	0.236	0.097	0.076	0.018	0.003	0.006	0.4483
139925	153285	23838	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	0.279	0.985	0.128	0.008	0.008	0.230	0.100	0.085	0.019	0.002	0.006	0.4627
139925	153284	23837	VARILLA DA- 2289 G60 C2 7/8" 14.0 m P80 R	0.279	0.985	0.128	0.008	0.008	0.230	0.100	0.085	0.019	0.002	0.006	0.4627
139926	153283	23837	VARILLA DA- 2289 G60 C2 7/8" 14.0 m P80 R	0.278	0.983	0.135	0.008	0.016	0.232	0.098	0.081	0.019	0.002	0.005	0.4609
139927	153282	23837	VARILLA DA- 2289 G60 C2 7/8" 14.0 m P80 R	0.289	0.985	0.147	0.006	0.024	0.239	0.072	0.068	0.015	0.002	0.005	0.4697
139865	153292	23839	VARILLA DA- 2289 G60 C2 7/8" 9.0m P79 R	0.277	1.000	0.124	0.008	0.021	0.251	0.091	0.082	0.020	0.002	0.005	0.4626
139866	153291	23839	VARILLA DA- 2289 G60 C2 7/8" 9.0m P79 R	0.268	0.991	0.137	0.008	0.019	0.240	0.090	0.088	0.024	0.002	0.005	0.4527
139922	153290	23839	VARILLA DA- 2289 G60 C2 7/8" 9.0m P79 R	0.289	0.985	0.140	0.008	0.019	0.248	0.081	0.079	0.020	0.002	0.005	0.4708
138324	183243	27024	VARILLA DA- 2289 G60 C2 8.5mm 6.0 m P126 R	0.265	1.328	0.215	0.011	0.017	0.249	0.132	0.078	0.019	0.024	0.005	0.5072
127132	175137	23861	VARILLA DA- 2289 G60 C2 9.0mm 6.0 m P84 R	0.281	1.369	0.191	0.010	0.016	0.257	0.091	0.077	0.019	0.031	0.002	0.5253
138328	183254	23861	VARILLA DA- 2289 G60 C2 9.0mm 6.0 m P84 R	0.265	1.313	0.183	0.012	0.012	0.284	0.115	0.112	0.026	0.024	0.005	0.5053
196018	181215	23861	VARILLA DA- 2289 G60 C2 9.0mm 6.0 m P84 R	0.263	1.328	0.174	0.023	0.012	0.384	0.177	0.096	0.018	0.028	0.001	0.5138

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Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglamento técnico de barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de las propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la compañía, cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to standards applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records in compliance with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015 NO. 2021CRE-895 CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Quality Assurance Manager

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EXCELENCIA EN CALIDAD

Acería Celaya
Carretera 45 Panamericana Km 64.8 [illegible]uo el Chinaco
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DECLARACIÓN DE CONFORMIDAD DE [illegible] CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

. Certificado / Certificate No:	18602 - 24370628 - 7
Fecha / Date:	23/02/2023

Hecho en México / Made in Mexico

Propiedades Mecánicas / Mechanical Properties

Colada / Heat	Secuencia / Sequence	Producto / Description of Goods	Grado / Steel Grade	Calibre / Diameter	Cantidad / Quantity	RT kg/mm²	TS MPa	% Elong / Elong	LF kg/mm²	YS MPa	RT/LF	P. Doblez / Bend Test	Acabado	Peso metro (Kg/m)	Máx. Espaciamiento	Min. Altura	Separación Extr. Resaltes
						AVG	AVG	AVG	AVG	AVG			Punto 11 de la Norma NTC2289 /	AVG	AVG	AVG	AVG
138993	152153	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	11	60.83	596.61	15.00	46.64	457.38	1.30	Cumple / Successfully	CUMPLE	1.48	10.86	1.25	4.00
138994	152154	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	3	61.05	598.77	14.75	46.70	458.00	1.30	Cumple / Successfully	CUMPLE	1.49	10.46	1.14	4.00
139929	153248	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	46	61.14	599.61	15.50	46.96	460.52	1.30	Cumple / Successfully	CUMPLE	1.49	10.60	1.00	3.30
139930	153247	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	59	60.63	594.63	15.50	47.89	469.72	1.26	Cumple / Successfully	CUMPLE	1.47	10.71	1.00	3.40
139931	153246	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	68	60.11	589.50	16.00	47.91	469.87	1.25	Cumple / Successfully	CUMPLE	1.47	10.56	1.00	4.45
139932	153245	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	63	61.66	604.67	16.90	48.68	477.43	1.26	Cumple / Successfully	CUMPLE	1.48	10.55	1.05	3.85
139933	153244	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	G60	5/8"	29	63.04	618.28	16.46	49.47	485.15	1.27	Cumple / Successfully	CUMPLE	1.48	10.30	0.78	4.58
139730	184394	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	G60	5/8"	17	62.51	613.09	16.68	48.94	480.02	1.27	Cumple / Successfully	CUMPLE	1.49	10.32	0.73	3.66
139731	184395	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	G60	5/8"	41	62.62	614.10	19.10	48.93	479.92	1.27	Cumple / Successfully	CUMPLE	1.49	10.33	0.76	3.80
139732	184396	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	G60	5/8"	25	62.62	614.12	18.07	48.63	476.97	1.28	Cumple / Successfully	CUMPLE	1.49	10.33	0.74	3.80
139733	184397	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	G60	5/8"	39	62.19	609.89	15.72	48.82	478.80	1.27	Cumple / Successfully	CUMPLE	1.49	10.32	0.76	3.76
139734	184398	VARILLA DA- 2289 G60 C2 5/8" 9.0m P73 R	G60	5/8"	8	62.55	613.45	17.34	48.72	477.84	1.28	Cumple / Successfully	CUMPLE	1.48	10.33	0.72	3.80
139922	153289	VARILLA DA- 2289 G60 C2 7/8" 10.0m P77 R	G60	7/8"	18	61.88	606.89	15.50	46.86	459.55	1.32	Cumple / Successfully	CUMPLE	2.89	14.49	1.38	3.66
139923	153288	VARILLA DA- 2289 G60 C2 7/8" 10.0m P77 R	G60	7/8"	25	61.52	603.38	16.00	47.01	461.06	1.30	Cumple / Successfully	CUMPLE	2.89	14.49	1.70	3.66
129531	142757	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	G60	7/8"	2	68.40	670.83	15.00	51.17	501.83	1.33	Cumple / Successfully	CUMPLE	2.96	14.55	1.83	4.10
139923	153287	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	G60	7/8"	41	61.07	598.90	16.50	47.65	467.32	1.28	Cumple / Successfully	CUMPLE	2.93	14.50	1.33	3.65
139924	153286	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	G60	7/8"	65	59.39	582.44	16.00	43.62	427.85	1.36	Cumple / Successfully	CUMPLE	2.92	14.49	1.79	3.66
139925	153285	VARILLA DA- 2289 G60 C2 7/8" 12.0 m P16 R	G60	7/8"	36	58.65	575.20	16.00	44.46	436.05	1.31	Cumple / Successfully	CUMPLE	2.90	14.49	1.76	3.66
139925	153284	VARILLA DA- 2289 G60 C2 7/8" 14.0 m P80 R	G60	7/8"	29	59.38	582.38	16.00	44.05	432.03	1.34	Cumple / Successfully	CUMPLE	2.92	14.49	1.79	3.66
139926	153283	VARILLA DA- 2289 G60 C2 7/8" 14.0 m P80 R	G60	7/8"	67	58.61	574.84	16.00	43.53	426.96	1.34	Cumple / Successfully	CUMPLE	2.92	14.49	1.79	3.66

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EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015 NO. 2021CRE-895 CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Quality Assurance Manager

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EXCELENCIA EN CALIDAD

Acería Celaya
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DECLARACIÓN DE CONFORMIDAD DE [illegible] CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

[illegible] Certificado / Certificate No:	17564 - 24137977 - 7
Fecha / Date:	31/10/2022

Hecho en México / Made in Mexico

Análisis Químico / Chemical Analysis (% Peso / Weight)

Colada / Heat	Secuencia / Sequence	Clave / Code	Producto / Description of Goods	% C AVG	% Mn AVG	% Si AVG	% P AVG	% S AVG	% Cu AVG	% Cr AVG	% Ni AVG	% Mo AVG	% V AVG	% Nb AVG	CE AVG
196013	181603	23815	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	0.271	1.314	0.181	0.013	0.026	0.258	0.115	0.077	0.016	0.025	0.001	0.5095
196014	181384	23815	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	0.250	1.368	0.180	0.012	0.023	0.271	0.122	0.076	0.015	0.028	0.000	0.4982
196014	181602	23815	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	0.250	1.368	0.180	0.012	0.023	0.271	0.122	0.076	0.015	0.028	0.000	0.4982
196015	181383	23815	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	0.263	1.364	0.168	0.016	0.018	0.367	0.137	0.092	0.019	0.026	0.001	0.5149
196015	181601	23815	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	0.263	1.364	0.168	0.016	0.018	0.367	0.137	0.092	0.019	0.026	0.001	0.5149
136452	181691	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.267	1.008	0.128	0.011	0.013	0.226	0.117	0.073	0.021	0.003	0.002	0.4558
136453	181690	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.265	1.001	0.131	0.011	0.019	0.239	0.111	0.078	0.020	0.002	0.002	0.4530
136454	181689	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.280	0.985	0.154	0.013	0.012	0.278	0.117	0.087	0.023	0.004	0.002	0.4672
136455	181688	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.276	0.986	0.141	0.012	0.016	0.250	0.129	0.085	0.023	0.005	0.002	0.4630
136458	181683	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.264	0.984	0.149	0.010	0.012	0.212	0.101	0.085	0.022	0.004	0.002	0.4470
136459	181685	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.262	0.985	0.147	0.009	0.012	0.213	0.102	0.084	0.022	0.004	0.003	0.4457
136460	181684	23822	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	0.263	0.986	0.129	0.004	0.017	0.212	0.101	0.074	0.017	0.010	0.001	0.4458
133924	147082	23821	VARILLA DA- 2289 G60 C2 5/8" 14.0 m P74 R	0.266	0.989	0.196	0.010	0.015	0.266	0.130	0.081	0.018	0.004	0.003	0.4545
136568	149880	23821	VARILLA DA- 2289 G60 C2 5/8" 14.0 m P74 R	0.286	0.980	0.166	0.012	0.014	0.222	0.160	0.084	0.019	0.004	0.002	0.4751
136569	149881	23821	VARILLA DA- 2289 G60 C2 5/8" 14.0 m P74 R	0.275	0.997	0.183	0.011	0.012	0.232	0.138	0.091	0.022	0.004	0.003	0.4647
136570	149885	23821	VARILLA DA- 2289 G60 C2 5/8" 14.0 m P74 R	0.264	0.983	0.124	0.011	0.020	0.239	0.180	0.088	0.021	0.003	0.003	0.4564
136571	149882	23821	VARILLA DA- 2289 G60 C2 5/8" 14.0 m P74 R	0.284	0.997	0.139	0.012	0.007	0.267	0.121	0.093	0.022	0.004	0.003	0.4731
136450	181695	23823	VARILLA DA- 2289 G60 C2 5/8" 6.0 m P72 R	0.283	1.028	0.231	0.009	0.019	0.245	0.115	0.081	0.025	0.003	0.002	0.4756
136071	149373	23832	VARILLA DA- NTC 2289 G60 C2 3/4" 12.0 m P41 R	0.274	0.988	0.157	0.009	0.020	0.270	0.086	0.089	0.019	0.003	0.002	0.4584
136072	149372	23832	VARILLA DA- NTC 2289 G60 C2 3/4" 12.0 m P41 R	0.282	0.982	0.152	0.006	0.017	0.260	0.089	0.099	0.024	0.004	0.002	0.4659
136193	149374	23832	VARILLA DA- NTC 2289 G60 C2 3/4" 12.0 m P41 R	0.266	0.981	0.134	0.008	0.016	0.268	0.120	0.083	0.021	0.002	0.002	0.4524

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EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015
NO. 2021CRE-895
CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
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DECLARACIÓN DE CONFORMIDAD DE BARRAS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

Certificado / Certificate No:	17564 - 24137977 - 7
Fecha / Date:	31/10/2022

Hecho en México / Made in Mexico

Propiedades Mecánicas / Mechanical Properties

Colada / Heat	Secuencia / Sequence	Producto / Description of Goods	Grado / Steel Grade	Calibre / Diameter	Cantidad / Quantity	RT kg/mm²	TS MPa	% Elong / Elong	LF kg/mm²	YS MPa	RT/LF	P. Doblez / Bend Test	Acabado	Peso metro (Kg/m)	Máx. Espaciamiento	Min. Altura	Separación Extr. Resaltes
						AVG	AVG	AVG	AVG	AVG			Punto 11 de la Norma NTC2289 /	AVG	AVG	AVG	AVG
136580	149871	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	G60	1/2"	9	64.25	630.12	16.25	50.34	493.70	1.27	Cumple / Successfully	CUMPLE	0.96	8.32	0.85	3.68
135310	149165	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	1	63.92	626.86	16.50	49.00	480.58	1.30	Cumple / Successfully	CUMPLE	2.14	12.85	1.25	4.12
136192	149385	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	21	63.91	626.76	15.83	49.76	487.98	1.28	Cumple / Successfully	CUMPLE	2.14	12.85	1.09	4.85
136194	149384	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	4	63.20	619.82	15.07	48.46	475.27	1.30	Cumple / Successfully	CUMPLE	2.15	12.85	1.10	4.89
136195	149383	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	12	61.98	607.86	15.00	47.69	467.73	1.29	Cumple / Successfully	CUMPLE	2.13	12.86	1.14	4.89
136196	149382	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	43	63.18	619.61	15.02	48.68	477.47	1.29	Cumple / Successfully	CUMPLE	2.15	12.86	1.16	4.87
136463	149811	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	29	57.96	568.43	16.50	43.40	425.60	1.33	Cumple / Successfully	CUMPLE	2.13	12.80	1.33	4.85
136465	149810	VARILLA DA- 2289 G60 C2 3/4" 14.0 m P77 R	G60	3/4"	21	57.95	568.30	16.00	43.40	425.60	1.33	Cumple / Successfully	CUMPLE	2.13	12.88	1.33	5.88
195995	181387	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	3	68.94	676.14	15.44	48.11	471.87	1.43	Cumple / Successfully	CUMPLE	0.53	6.21	0.79	2.78
195995	181388	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	22	68.67	673.46	15.16	47.91	469.92	1.43	Cumple / Successfully	CUMPLE	0.53	6.29	0.69	2.97
195996	181386	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	28	70.10	687.44	14.95	48.87	479.25	1.43	Cumple / Successfully	CUMPLE	0.54	6.19	0.78	3.15
195999	181385	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	33	69.83	684.86	15.19	47.68	467.64	1.46	Cumple / Successfully	CUMPLE	0.53	6.15	0.78	2.78
196013	181603	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	8	67.40	660.99	15.06	47.80	468.80	1.40	Cumple / Successfully	CUMPLE	0.53	6.32	0.48	2.09
196014	181384	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	10	70.02	686.71	15.26	49.20	482.50	1.42	Cumple / Successfully	CUMPLE	0.53	6.29	0.50	2.96
196014	181602	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	27	67.47	661.73	15.61	47.31	464.01	1.42	Cumple / Successfully	CUMPLE	0.53	6.34	0.49	2.10
196015	181383	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	3	69.83	684.80	14.50	47.11	462.01	1.48	Cumple / Successfully	CUMPLE	0.53	6.35	0.52	2.10
196015	181601	VARILLA DA- 2289 G60 C2 3/8" 12.0 m P67 R	G60	3/8"	1	67.06	657.62	15.52	47.20	462.90	1.42	Cumple / Successfully	CUMPLE	0.53	6.34	0.49	2.10
136452	181691	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	G60	5/8"	40	62.79	615.80	16.72	48.53	475.96	1.29	Cumple / Successfully	CUMPLE	1.49	10.36	0.99	3.61
136453	181690	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	G60	5/8"	24	62.98	617.61	16.93	48.67	477.35	1.29	Cumple / Successfully	CUMPLE	1.49	10.36	1.00	3.59
136454	181689	VARILLA DA- 2289 G60 C2 5/8" 12.0 m P38 R	G60	5/8"	12	63.38	621.58	16.80	49.46	485.10	1.28	Cumple / Successfully	CUMPLE	1.48	10.36	1.05	3.63

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Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglamento técnico de barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de las propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la compañía, cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to standards applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records in compliance with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015 NO. 2021CRE-895 CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Quality Assurance Manager

DEACERO®

EXCELENCIA EN CALIDAD

Acería Celaya
Carretera 45 Panamericana Km 64.8 [illegible]do el Chinaco
C.P./ZIP 38260 MPIO. VILLAGRAN, GUANAJUATO
Tel/Phone (+52) 01 818 368 1111
MX 01 800 021 3322, USA 1800 332 2376

DECLARACIÓN DE CONFORMIDAD DE B[illegible]AS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

No. Certificado / Certificate No:	18075 - 242634430 - 7
Fecha / Date:	21/12/2022

Hecho en México / Made in M

Análisis Químico / Chemical Analysis (% Peso / Weight)

Colada / Heat	Secuencia / Sequence	Clave / Code	Producto / Description of Goods	% C AVG	% Mn AVG	% Si AVG	% P AVG	% S AVG	% Cu AVG	% Cr AVG	% Ni AVG	% Mo AVG	% V AVG	% Nb AVG	CE AVG
138013	151524	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.262	1.001	0.153	0.007	0.017	0.247	0.119	0.081	0.019	0.002	0.004	0.451 0
138014	151522	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.262	0.994	0.127	0.011	0.030	0.264	0.113	0.082	0.022	0.002	0.004	0.449 6
138014	151523	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.262	0.994	0.127	0.011	0.030	0.264	0.113	0.082	0.022	0.002	0.004	0.449 6
138015	151518	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.268	1.004	0.133	0.008	0.022	0.252	0.110	0.079	0.019	0.003	0.005	0.456 7
138016	151517	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.262	1.000	0.158	0.007	0.017	0.263	0.092	0.088	0.020	0.002	0.004	0.448 2
138017	151516	23818	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	0.271	1.028	0.150	0.009	0.025	0.256	0.105	0.078	0.022	0.002	0.004	0.462 7
137025	150477	23817	VARILLA DA- 2289 G60 C2 1/2" 14.0 m P71 R	0.272	0.992	0.135	0.010	0.021	0.305	0.100	0.100	0.026	0.003	0.002	0.459 9
137394	151072	23817	VARILLA DA- 2289 G60 C2 1/2" 14.0 m P71 R	0.284	1.003	0.139	0.011	0.023	0.256	0.157	0.077	0.018	0.003	0.004	0.476 9
136452	151086	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.267	1.008	0.128	0.011	0.013	0.226	0.117	0.073	0.021	0.003	0.002	0.455 8
136569	151085	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.275	0.997	0.183	0.011	0.012	0.232	0.138	0.091	0.022	0.004	0.003	0.464 7
137301	150813	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.276	0.993	0.124	0.011	0.026	0.318	0.164	0.094	0.029	0.003	0.004	0.470 4
137302	150812	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.281	0.980	0.136	0.010	0.019	0.291	0.131	0.096	0.026	0.003	0.004	0.469 4
137303	150811	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.270	0.998	0.149	0.008	0.028	0.281	0.089	0.095	0.023	0.005	0.003	0.456 3
137306	150809	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.275	0.991	0.129	0.010	0.021	0.287	0.097	0.099	0.025	0.003	0.004	0.461 3
137486	151084	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.261	1.022	0.171	0.011	0.024	0.248	0.129	0.100	0.026	0.008	0.004	0.455 2
137606	151090	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.274	1.014	0.149	0.010	0.032	0.260	0.146	0.089	0.021	0.004	0.004	0.467 8
137607	151089	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.266	1.007	0.194	0.009	0.026	0.253	0.119	0.092	0.022	0.003	0.004	0.456 1
137608	151088	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.284	0.992	0.237	0.010	0.020	0.241	0.110	0.079	0.019	0.004	0.004	0.470 4
137611	151083	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.268	0.994	0.179	0.009	0.021	0.290	0.139	0.098	0.025	0.004	0.004	0.459 7
137612	151087	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.263	0.994	0.174	0.010	0.022	0.305	0.144	0.098	0.025	0.004	0.005	0.455 6
137614	151082	23819	VARILLA DA- 2289 G60 C2 1/2" 6.0 m P68 R	0.274	0.992	0.143	0.011	0.018	0.263	0.148	0.093	0.025	0.003	0.004	0.465 1

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Certificamos que este material ha sido producido, inspeccionado y probado de acuerdo a la norma NTC 2289:2020 y con el reglamento técnico de barras corrugadas y lisas de acero de baja aleación para refuerzos de concreto Resolución1856 de 2017 del MCIT. La información de las propiedades químicas y mecánicas contenida en el presente certificado son valores promedio obtenidos de los registros internos de la compañía, cumpliendo con la norma antes mencionada. / We certify that this material has been produced, inspected and tested according to standards applicable NTC2289:2020. All information described in the certificate are average values that are based on internal company records in compliance with the above rule 2015.

EMPRESA CERTIFICADA
ISO 9001:2015 Gestión de calidad
CERTIFICADO ISO 9001:2015
NO. 2021CRE-895
CERTIFICADO DESDE 2021-01-08

ING. JOSE CARLOS OREGEL AYALA
Gerente de Aseguramiento de Calidad / Qualit
Assurance Manager

DEACERO®

EXCELENCIA EN CALIDAD

Acería Celaya
Carretera 45 Panamericana Km 64.8 [illegible]ado el Chinaco
C.P./ZIP 38260 MPIO. VILLAGRAN, GUANAJUATO
Tel/Phone (+52) 01 818 368 1111
MX 01 800 021 3322, USA 1800 332 2376

DECLARACIÓN DE CONFORMIDAD DE B[illegible]RRAS CORRUGADAS DE BAJA ALEACIÓN, PARA REFUERZOS DE CONCRETO /

[illegible]. Certificado / Certificate No:	18075 - 24263430 - 7
Fecha / Date:	21/12/2022

Hecho en México / Made in Mexico

GYJ FERRETERIAS S.A.

Propiedades Mecánicas / Mechanical Properties

Colada / Heat	Secuencia / Sequence	Producto / Description of Goods	Grado / Steel Grade	Calibre / Diameter	Cantidad / Quantity	RT kg/mm²	TS MPa	% Elong / Elong	LF kg/mm²	YS MPa	RT/LF	P. Doblez / Bend Test	Acabado	Peso metro (Kg/m)	Máx. Espaciamiento	Min. Altura	Separación Extr. Resaltes
						AVG	AVG	AVG	AVG	AVG			Punto 11 de la Norma NTC2289 /	AVG	AVG	AVG	AVG
137310	150783	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	26	63.05	618.33	15.29	48.34	474.08	1.30	Cumple / Successfully	CUMPLE	0.95	8.49	0.90	3.55
137310	150803	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	5	64.02	627.84	16.00	50.23	492.64	1.27	Cumple / Successfully	CUMPLE	0.94	8.33	0.85	3.47
137311	150784	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	4	64.79	635.43	17.59	49.61	486.59	1.30	Cumple / Successfully	CUMPLE	0.95	8.49	0.90	3.45
137311	150801	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	2	63.00	617.83	16.62	49.01	480.62	1.28	Cumple / Successfully	CUMPLE	0.95	8.33	0.86	3.25
137311	150802	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	6	63.31	620.90	16.00	49.42	484.65	1.28	Cumple / Successfully	CUMPLE	0.95	8.33	0.87	3.42
137313	150787	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	1	63.45	622.24	15.09	48.74	478.05	1.30	Cumple / Successfully	CUMPLE	0.95	8.49	0.90	3.55
137314	150788	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	17	63.39	621.69	15.28	48.30	473.69	1.31	Cumple / Successfully	CUMPLE	0.95	8.46	0.90	3.55
137315	150789	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	14	63.05	618.34	15.33	48.38	474.47	1.30	Cumple / Successfully	CUMPLE	0.96	8.49	0.90	3.52
137619	151076	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	18	70.51	691.47	16.00	52.87	518.51	1.33	Cumple / Successfully	CUMPLE	0.94	8.33	0.84	3.25
137620	151074	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	29	65.51	642.48	17.77	49.62	486.60	1.32	Cumple / Successfully	CUMPLE	0.94	8.33	0.84	3.25
137620	151075	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	8	64.36	631.18	17.27	48.82	478.77	1.31	Cumple / Successfully	CUMPLE	0.94	8.33	0.84	3.25
137624	151073	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	31	65.16	639.04	16.50	48.24	473.12	1.35	Cumple / Successfully	CUMPLE	0.94	8.33	0.84	3.25
137947	151521	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	32	64.21	629.70	16.00	50.63	496.56	1.26	Cumple / Successfully	CUMPLE	0.95	8.41	0.74	2.98
138009	151525	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	11	62.09	608.97	16.48	47.24	463.29	1.31	Cumple / Successfully	CUMPLE	0.96	8.42	0.84	3.37
138010	151520	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	8	65.65	643.86	15.85	50.53	495.60	1.29	Cumple / Successfully	CUMPLE	0.95	8.30	0.75	2.98
138011	151519	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	23	64.83	635.79	17.62	49.62	486.65	1.30	Cumple / Successfully	CUMPLE	0.94	8.30	0.75	2.98
138013	151524	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	40	62.21	610.15	17.55	47.83	469.08	1.30	Cumple / Successfully	CUMPLE	0.95	8.42	0.84	3.37
138014	151522	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	33	65.66	643.93	16.33	50.54	495.67	1.29	Cumple / Successfully	CUMPLE	0.95	8.40	0.82	3.00
138014	151523	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	36	61.98	607.84	17.34	47.42	465.10	1.30	Cumple / Successfully	CUMPLE	0.95	8.40	0.90	3.08
138015	151518	VARILLA DA- 2289 G60 C2 1/2" 12.0 m P70 R	G60	1/2"	40	61.88	606.84	16.00	48.56	476.27	1.27	Cumple / Successfully	CUMPLE	0.95	8.33	0.84	3.25

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Gerente de Aseguramiento de Calidad / Quality Assurance Manager