JFE GALVAZING ALLOY

JFE GALVAZINC ALLOY is a Zn-Fe alloy coated steel sheet produced through hot dip galvanizing and annealing process which provides excellent levels of paint adhesion, corrosion resistance, and weldability. It is in use as a substrate for painting in applications requiring high corrosion resistance and high weldability in a wide range of fields such as automobile and electric appliance.

JFE Steel Galvanizing (Thailand) Ltd.
500/94, Moo 3, T. Tasit, A. Pluakdaeng, Rayong, 21140 Thailand

Public Standard

Japanses Industrial Standard (JIS)

Classification	Designation
JIS G3302 Hot dip zinc coated steel sheets and sheet.	SGHC, SGH440, SGCC, SGCD1, SGCD2, SGCD3, SGCD4, SGC440 etc.

The Japan Iron and Steel Federation Standard (JFS)

Classification	Designation
JFS A 3041 Hot dip galvannealed steel and strip for antomobile use.	JAH, JAC

JFE Standard

JFE GALVAZINC ALLOY for hot rolled base metal used

Classification	Designation
Forming quality	JFE-HC-GA
Drawing quality	JFE-HD-GA

JFE GALVAZINC ALLOY for cold rolled base metal used

Classification	Designation
Forming quality	JFE-CC-GA
Drawing quality	JFE-CD-GA
Deep drawing quality	JFE-CE-GA
Deep drawing quality with bake hardenability	JFE-CH-GA
Extra deep drawing quality, class 1	JFE-CF-GA
Extra deep drawing quality, class 2	JFE-CG-GA

JFE Standard

JFE GALVAZINC ALLOY for hot rolled base metal used (High strength steel)

Classification	Designation (- - - : Strength level)	Tensile strength level (N/mm^2)		
		370	400	440
Commercial quality	JFE-HA - - - GA	○	○	○

JFE GALVAZINC ALLOY for cold rolled base metal used (High strength steel)

Classification	Designation (- - - : Strength level)	Tensile strength level (N/mm^2)			
		340	390	440	590
Commercial quality	JFE-CA - - - GA	○	○	○	
High stretch quality with bake hardenability	JFE-CA - - - H-GA	○			
High yield ratio quality	JFE-CA - - - R-GA				○
Deep drawing quality	JFE-CA - - - P-GA	○	○	○	
Low yield ratio quality	JFE-CA - - - Y-GA				○

Mechanical Properties

JFE GALVAZINC ALLOY for hot rolled base metal used

Classification	Designation	Tensile Test					Bend Test	Hole Expanding Ratio λ
		Yield Point min, (N/mm^2)		Tensile strength min, (N/mm^2)	Elongation min, (%)		Internal Radius	min, (%)
		Thickness mm			Thickness mm			
		1.6 ≦ < 2.0	2.0 ≦ < 2.3		1.6 ≦ < 2.0	2.0 ≦ < 2.3		
Forming quality	JFE-HC-GA	205	195	270	35	36	-	-
Drawing quality	JFE-HD-GA	195	185	270	37	38	-	-
High strength steel for commercial quality	JFE-HA370-GA	235	225	370	33	34	-	-
High strength steel for commercial quality	JFE-HA400-GA	255	245	400	31	32	-	-
High strength steel for commercial quality	JFE-HA440-GA	275		440	25	26	-	-

Remarks

1. JIS No.5 test piece for tensile test taken in rolling direction.
2. Figures in parentheses are reference values.

Mechanical Properties

JFE GALVAZINC ALLOY for cold rolled base metal used

Classification	Designation	Tensile Test											Mean r-value min.		BH Value	Bend Test	
		Yield Point min, (N/mm^2)			Tensile strength min, (N/mm^2)	Elongation min, (%)										Internal Radius	
		Thickness mm				Thickness mm							Thickness mm		min, (N/mm^2)	Thickness mm	
		0.4 ≦ < 0.8	0.8 ≦ < 1.0	1.0 ≦ ≦ 2.3		0.4 ≦ < 0.6	0.6 ≦ < 0.8	0.8 ≦ < 1.0	1.0 ≦ < 1.2	1.2 ≦ < 1.6	1.6 ≦ < 2.0	2.0 ≦ ≦ 2.3	0.5 ≦ ≦ 1.0	1.0 < ≦ 1.6		≦ 1.6	1.6 <
Forming quality	JFE-CC-GA	185	175	165	270	35	36	37	38	39	40	41	-		-	-	-
Drawing quality	JFE-CD-GA	135	125	115	270	40	41	42	43	44	45	46	(1.2)	(1.1)	-	-	-
Deep drawing quality	JFE-CE-GA	130	120	110	270	42	43	44	45	46	47	48	(1.4)	(1.3)	-	-	-
Drawing quality with bake hardenability	JFE-CH-GA	135	125	115	270	40	41	42	43	44	45		(1.3)	(1.2)	30	-	-
Extra deep drawing quality, class 1	JFE-CF-GA	120	110	100	270	44	45	46	47	48	49	50	1.5	1.4	-	-	-
Extra deep drawing quality, class 2	JFE-CG-GA	110	100	90	260	45	46	47	48	49	50	51	1.6	1.5	-	-	-

Remark

1. JIS No.5 test piece for tensile test taken in rolling direction.
2. For thickness less than 0.6mm, the above tests are omitted if not specifically requested.
3. Figures in parentheses are reference values.

Mechanical Properties

JFE GALVAZINC ALLOY for cold rolled base metal used (High strength steel)

Classification	Designation	Tensile Test											Mean r-value min.		BH Value	Hole Expanding Ratio
		Yield Point min, (N/mm^2)			Tensile strength min, (N/mm^2)	Elongation min, (%)										
		Thickness mm				Thickness mm							Thickness mm			
		0.4 ≦ < 0.8	0.8 ≦ < 1.0	1.0 ≦ ≦ 2.3		0.4 ≦ < 0.6	0.6 ≦ < 0.8	0.8 ≦ < 1.0	1.0 ≦ < 1.2	1.2 ≦ < 1.6	1.6 ≦ < 2.0	2.0 ≦ < 2.3	0.5 ≦ ≦ 1.0	1.0 < ≦ 1.6	min, (N/mm^2)	λ min, (%)
Commercial quality	JFE-CA340-GA	215	205	195	340	32	33	34	35	36	37		-	-	-	-
Commercial quality	JFE-CA390-GA	255	245	235	390	28	29	30	31	32	33		-	-	-	-
Commercial quality	JFE-CA440-GA	295	285	275	440	25	26	27	28	29	30		-	-	-	-
Deep drawing quality with bake hardenability	JFE-CA340H-GA	195	185	175	340	33	34	35	36	37	38		(1.3)	(1.2)	30	-
High yield ratio quality	JFE-CA590R-GA	440	430	420	590	-	13	14	15	16	17		-	-	-	-
Deep drawing quality	JFE-CA340P-GA	175	165	155	340	34	35	36	37	38	39		(1.4)	(1.3)	-	-
Deep drawing quality	JFE-CA390P-GA	215	205	195	390	-	31	32	33	34	35		(1.3)	(1.2)	-	-
Deep drawing quality	JFE-CA440P-GA	255	245	235	440	-	27	28	29	30	31		(1.3)	(1.3)	-	-
Low yield ratio quality	JFE-CA590Y-GA	325	315	305	590	16	17	18	19	20	21		-	-	-	-

Remark

1. JIS No.5 test piece for tensile test taken in rolling direction.
2. For thickness less than 0.6mm, the above tests are omitted if not specifically requested.
3. Figures in parentheses are reference values.

Coating Weight

JIS Products

Total coating weight on both sides	F06	F08	F10	F12
Min. coating weight in triple-spot test on both sides (g/m^2)	60	80	100	120
Equivalent coating thickness (mm)	0.013	0.017	0.021	0.026

1. JIS H0401 is applied to coating weight measurement.
2. F04 is subject to negotiation.

JFE GALVAZINC ALLOY

Total coating weight on both sides	30/30	45/45	60/60
Min. coating weight in triple-spot test on both sides (g/m^2)	40	60	80

1. Coating weight is measured by the triple-spot test specified in JIS H 0401
2. Coating weight includes iron in the coated layer.
3. Coating weight not specified in the tables is subject to negotiation.

Oiling

Oiling	Designation
Oiling	○
No oiling	X

Dimensional Tolerance

JIS G 3302 is applied to strip dimensional tolerance. The thickness tolerance is shown below.
Thickness tolerance shall be applied to nominal thickness plus the equivalent thickness of coating.

Hot rolled base metal used

Unit : mm

Nominal thickness \ Width	< 1,200	1,200 ≦ < 1,500	1,500 ≦ ≦ 1,880
1.60 ≦ , < 2.00	± 0.17	± 0.18	± 0.19
2.00 ≦ , ≦ 2.30	± 0.18	± 0.20	± 0.22

The measuring point is any points more than 25mm from the edge of the strip.

Cold rolled base metal used

Unit : mm

Nominal thickness \ Width	< 1,000	1,000 ≦ < 1,250	1,250 ≦ < 1,600	1,600 ≦ ≦ 1,880
0.40 ≦ , < 0.60	± 0.06	± 0.06	± 0.07	± 0.08
0.60 ≦ , < 0.80	± 0.07	± 0.07	± 0.07	± 0.08
0.80 ≦ , < 1.00	± 0.07	± 0.08	± 0.09	± 0.10
1.00 ≦ , < 1.25	± 0.08	± 0.09	± 0.10	± 0.12
1.25 ≦ , < 1.60	± 0.10	± 0.11	± 0.12	± 0.14
1.60 ≦ , < 2.00	± 0.12	± 0.13	± 0.14	± 0.16
2.00 ≦ , ≦ 2.30	± 0.14	± 0.15	± 0.16	± 0.18