

HYUNDAI BNG STEEL COMPANY BROCHURE

HYUNDAI  
**BNGSTEEL**  
Belief & Growth

HYUNDAI BNGSTEEL  
COMPANY BROCHURE





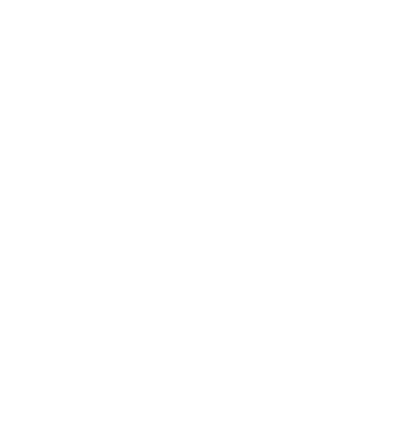
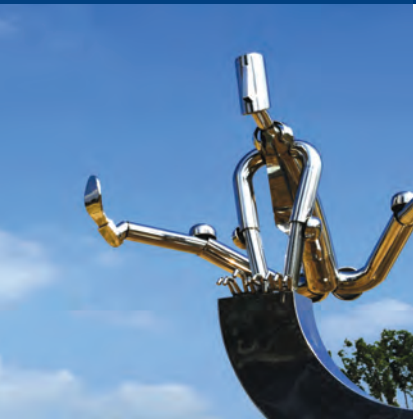
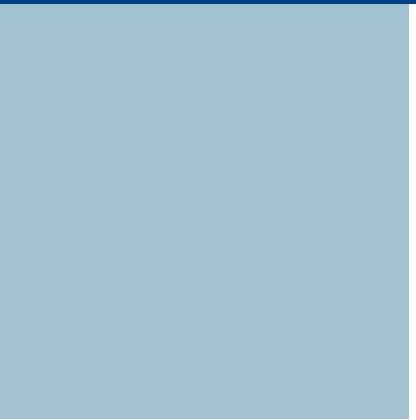
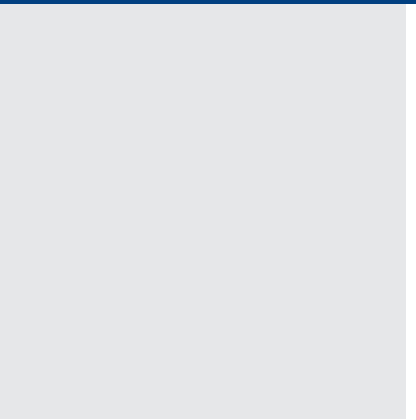
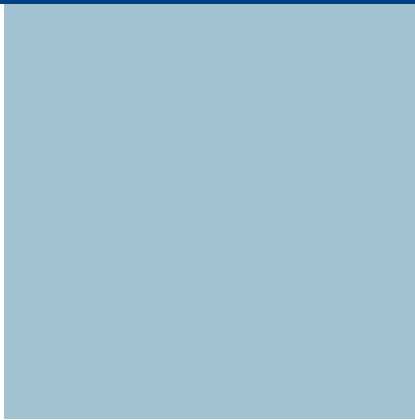
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Happiness with Customer  
And Future with Company



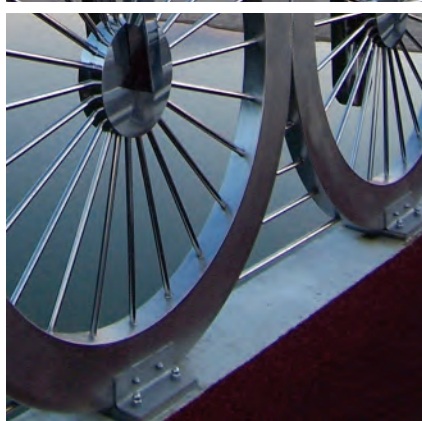
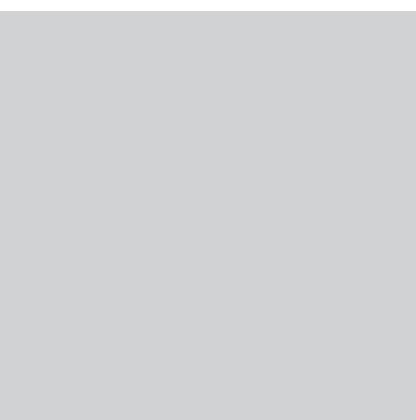




HYUNDAI  
**BNG STEEL**  
Belief & Growth



HYUNDAI BNG STEEL has been with customers by manufacturing quality material for automotive, construction, trains, IT, home appliances, etc, and will do our best to make customer's life safer and happier.





HISTORY  
OF  
HYUNDAI  
BNG STEEL

HYUNDAI BNG STEEL, established in 1966 to lay the groundwork for industrialization, has manufactured stainless cold rolled steel sheet, playing a key role in the technical development of the Korean automotive, construction, IT and electronics industries. Since its establishment, the company has continued to invest in equipment and R&D and was the first to develop bright annealing products and embossed plates in Korea. After merged to HYUNDAI Motor Group, the company has expanded its facilities (#5ZM, #3BA, etc), established more plants (the ultra thin sheet metal plant in Changwon), taken over another plants (aluminum engine block plant in Gwangju) and rationalized production equipment to ensure the highest quality and price competitiveness.

HYUNDAI BNG STEEL will not settle for the present and will prepare to become highly specialized raw material supplier.

2010~

1966~

- 1966. 4. Establishing Samyang Special Steel Co
- 1975. 10. Changed the name to KISCO (Korea Special Steel Co., Ltd.)
- 1975. 11. Constructed UlsanPlant, Samyang Special Steel Co
- 1977. 12. Constructed ChangwonPlant, KISCO
- 1980. 12. Won the prize for 100 million dollar export award
- 1982. 6. Changed name to SammiIntegrated Special Steel Co
- 1986. 3. Acquired quality standard certified by GL
- 1986. 10. Acquired quality standard certified by JIS
- 1987. 3. Initial Public offering
- 1989. 5. Took over Atlas specialty steel(Canada) and AI Tech specialty steel(US)
- 1991. 4. Constructed second stainless steel bar plant
- 1993. 3. Acquired ISO 9002 certification
- 1994. 12. Constructed thin sheet metal plant

1980~

1990~

2000~

- 2001. 4. Incorporated into HYUNDAI Motor Co.,Ltd
- 2002. 4. Changed name to BNG STEEL Co.
- 2002. 11. Acquired ISO 9001 certification
- 2003. 6. Opened ERP (Enterprise Resource Planning) system
- 2006. 6. Constructed new facility(#3BA & #5ZM)
- 2006. 9. Designated as an excellent company for labor-management culture by the Ministry of Labor
- 2010. 1. Constructed Precision strip Cold Rolling Plant
- 2010. 6. Acquired ISO 14001 certification
- 2011. 3. Changed name to HYUNDAI BNG STEEL Co., Ltd
- 2012. 9. Took over Gwangju plant from HYUNDAI WIA
- 2013. 7. Opened Southern sales office



1966~

1980~

1990~

2000~

2010~

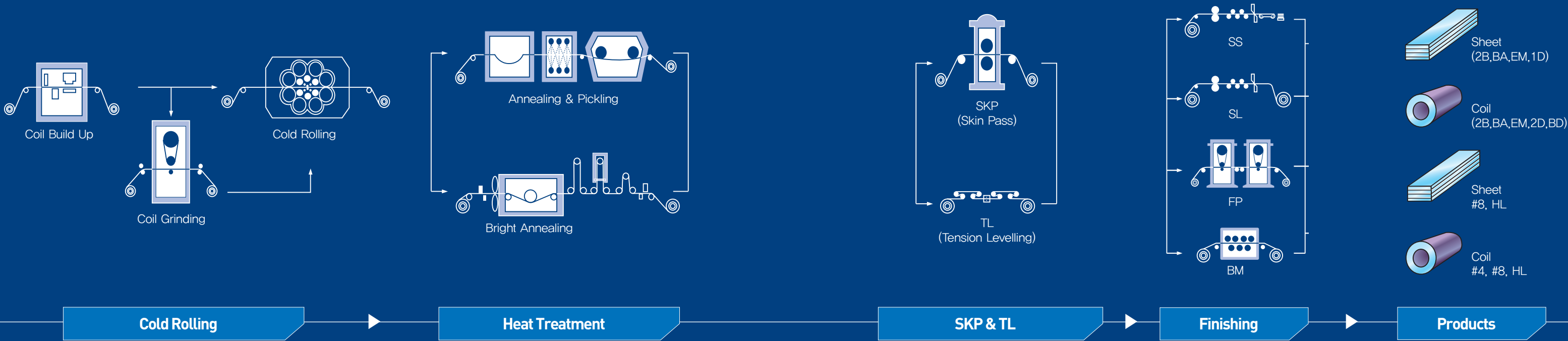
- 1997. 1. Acquired quality standard certified by U-SIGN
- 1997. 3. Sold rod and tube sectors in Changwon plant to POSCO Specialty Steel



# Manufacturing Process & Facilities

# Belief & Growth

## Manufacturing Process



## Product Facilities



**Grinding Process(CG-LINE)**  
A process grinding surface to eliminate defectives on product surface, occurred during hot/ cold rolling processes.



**Annealing & Pickling(AP-LINE)**  
A process performing heat treatment to eliminate any remaining stress occurred during cold rolling and gain physical properties and eliminating scales that probably emerge during heat treatment.



**Cold Rolling(ZM-LINE)**  
A process cold-rolling hot coil in accordance with a variety of thickness requested by customers(it consists of 20 rolling rolls and is processed by allowing tension to both reels).



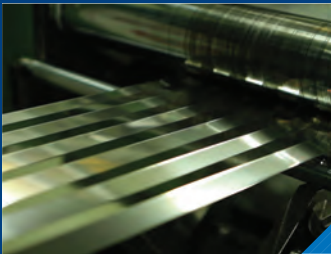
**Bright Annealing(BA-LINE)**  
A process performing heat treatment to maintain the inherent gloss of stainless steel that is cold-rolled in the deoxidization in order to get intense surface gloss.



**Temper Rolling(SKP-LINE)**  
A process performing cold rolling slightly to improve mechanical properties, level tension and get surface gloss.



**Tension Leveling(TL-LINE)**  
A process to improve levelness by applying a tension to a special product or surface processed product.



**Shearing & Slitting (SS, SL-LINE)**  
A process shearing and slitting cold rolled products suitable for dimensions requested by customers.



**Packing & Delivery**  
A process packing finished products and delivering them to a destination.



## Belief & Growth

HYUNDAI BNG STEEL strives to produce high quality products through the accumulation of advanced technologies, as korea's first stainless cold rolled steel sheet manufacturer.

“Fulfilling customer satisfactions  
with the best quality.”





# Chemical Composition & Mechanical Properties

## Chemical Composition

Austenite									
Steel Grade Code	Standard Code	Chemical Composition (%)							
		C	Si	Mn	P	S	Cr	Ni	other
301	STS301	≤0.15	≤1.00	≤2.00	≤0.045	≤0.030	16.0~18.0	6.0~8.0	—
301L	STS301L	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	16.0~18.0	6.0~8.0	N≤0.20
304	STS304	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	18.0~20.0	8.0~10.5	—
304L	STS304L	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	18.0~20.0	9.0~13.0	—
304J1	STS304J1	≤0.08	≤1.70	≤3.00	≤0.045	≤0.030	15.0~18.0	6.0~9.0	Cu1.0~3.0
316	STS316	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	16.0~18.0	10.0~14.0	Mo 2.0~3.0
316L	STS316L	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	16.0~18.0	12.0~15.0	Mo 2.0~3.0
321	STS321	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	17.0~19.0	9.0~13.0	Ti5xC% and higher

Ferrite								
Steel Grade Code	Standard Code	Chemical Composition (%)						
		C	Si	Mn	P	S	Cr	other
409L <sup>1)</sup>	STR409L	≤0.03	≤1.00	≤1.00	≤0.040	≤0.030	10.50~11.70	Ti6xC% and higher~0.75
430	STS430	≤0.12	≤0.75	≤1.00	≤0.040	≤0.030	16.00~18.00	—
430J1L	STS430J1L	≤0.025	≤1.00	≤1.00	≤0.040	≤0.030	16.00~20.00	N 0.025 and lower, Cu 0.30~0.80 Nb8X(C%+N%)~0.80
436L	STS436L	≤0.025	≤1.00	≤1.00	≤0.040	≤0.030	16.00~19.00	Mo 0.75 1.25, N 0.025 and lower Ti, Nb, Zr or the combination 8X(C%+N%)~0.80
439L	STS439	≤0.030	≤1.00	≤1.00	≤0.040	≤0.030	16.00~19.00	Ti, Nb, Zr or the combination 8X(C%+N%)~0.80
444	STS444	≤0.025	≤1.00	≤1.00	≤0.040	≤0.030	17.00~20.00	Mo 1.75~2.50
433CT <sup>2)</sup>	BNG433CT	≤0.015	≤1.00	≤1.00	≤0.040	≤0.030	20.00~23.00	N 0.025 and lower Ti, Nb, Zr or the combination 8X(C%+N%)~0.80

1) Heat-resistant steel (KS D 3732)      2) HYUNDAI BNGSTEEL ASTM A240

Martensite								
Steel Grade Code	Standard Code	Chemical Composition (%)						
		C	Si	Mn	P	S	Cr	Ni
420J1	STS420J1	0.16~0.25	≤1.00	≤1.00	≤0.040	≤0.030	12.00~14.00	≤ 0.60
420J2	STS420J2	0.26~0.40	≤1.00	≤1.00	≤0.040	≤0.030	12.00~14.00	≤ 0.60

## Mechanical Properties

Austenite							
Steel Grade Code	Standard Code	Proof stress (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Hardness		
					HB	HRB	HV
301	STS301	205 and higher	520 and higher	40 and higher	207 and lower	95 and lower	218 and lower
301L	STS301L	215 and higher	550 and higher	45 and higher	207 and lower	95 and lower	218 and lower
304	STS304	205 and higher	520 and higher	40 and higher	187 and lower	90 and lower	200 and lower
304L	STS304L	175 and higher	480 and higher	40 and higher	187 and lower	90 and lower	200 and lower
304J1	STS304J1	155 and higher	450 and higher	40 and higher	187 and lower	90 and lower	200 and lower
316	STS316	205 and higher	520 and higher	40 and higher	187 and lower	90 and lower	200 and lower
316L	STS316L	175 and higher	480 and higher	40 and higher	187 and lower	90 and lower	200 and lower
321	STS321	205 and higher	520 and higher	40 and higher	187 and lower	90 and lower	200 and lower

Ferrite							
Steel Grade Code	Standard Code	Proof stress (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Hardness		
					HB	HRB	HV
409L <sup>1)</sup>	STR409L	175 and higher	360 and higher	25 and higher	162 and lower	80 and lower	175 and lower
430	STS430	205 and higher	450 and higher	22 and higher	183 and lower	88 and lower	200 and lower
430J1L	STS430J1L	205 and higher	390 and higher	22 and higher	192 and lower	90 and lower	200 and lower
436L	STS436L	245 and higher	410 and higher	20 and higher	217 and lower	96 and lower	230 and lower
439L	STS439	175 and higher	360 and higher	22 and higher	183 and lower	88 and lower	200 and lower
444	STS444	245 and higher	410 and higher	20 and higher	217 and lower	96 and lower	230 and lower
443CT <sup>2)</sup>	BNG443CT	245 and higher	410 and higher	20 and higher	217 and lower	96 and lower	230 and lower

1) Heat-resistant steel (KS D 3732)      2) HYUNDAI BNGSTEEL ASTM A240

Martensite							
Steel Grade Code	Standard Code	Proof stress (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Hardness		
					HB	HRB	HV
420J1	STS420J1	225 and higher	520 and higher	18 and higher	223 and lower	97 and lower	234 and lower
420J2	STS420J2	225 and higher	540 and higher	18 and higher	235 and lower	99 and lower	247 and lower



## Surface Finish

Surface Code	Surface Status & Process	Application
No.1	Product processed with heat treatment, acid cleaning process or similar process after hot rolling	Used for applications no need of surface gloss such as industrial facilities, building materials and chemical tanks
HD (High hardened product)	Cold rolled product with high hardness, by applying the process of hardening	High hardened product, springs, knives, rolling stock, press bench, disk break and etc
No.2D	Product processed with heat treatment, acid cleaning process or similar process after cold rolling	Product no need of gloss: general use, construction, DDQ and anti-acid use.
No.2B	Product processed with heat treatment, acid cleaning process or similar process after cold rolling and tempered process to get appropriate gloss	Used for most applications as a representative of cold rolled product used for general use
No.4	Product ground with grinding belt of No.150 ~ 180 in accordance with KS L 6001(abrasive particle size) Regulation	Construction, kitchenware, automobile, medical devices and food facilities
BA	Product processed with bright heat treatment after cold rolling to get high reflection and gloss	Automobile parts, household electronics, kitchenware, ornaments and constructions
BB	Product with metallic gloss by bright annealing after cold rolling	General use such as household electronics and kitchenware
HL	Product ground to have continuous grinding patterns using abrasive of appropriate particle size	General use for interior/exterior construction materials
No.8	Product ground by turning buff with abrasive of 800Mesh and higher to get high gloss and reflection, which is with grounding pattern(dry type)	Construction, reflector, press bench, ornaments and etc
MR	Product ground by turning buff with abrasive of 1000Mesh and higher to get high gloss and reflection, which is without grounding pattern(dry type)	Construction, reflector, press bench, ornaments and etc
EM	Cold rolled product with surface processed embossing roll	Construction, elevator interiors, press bench, kitchen, electronic parts and ornaments



304-BA



304-MR



304-#8



304-BB



304-2B



304-#4



304-HL

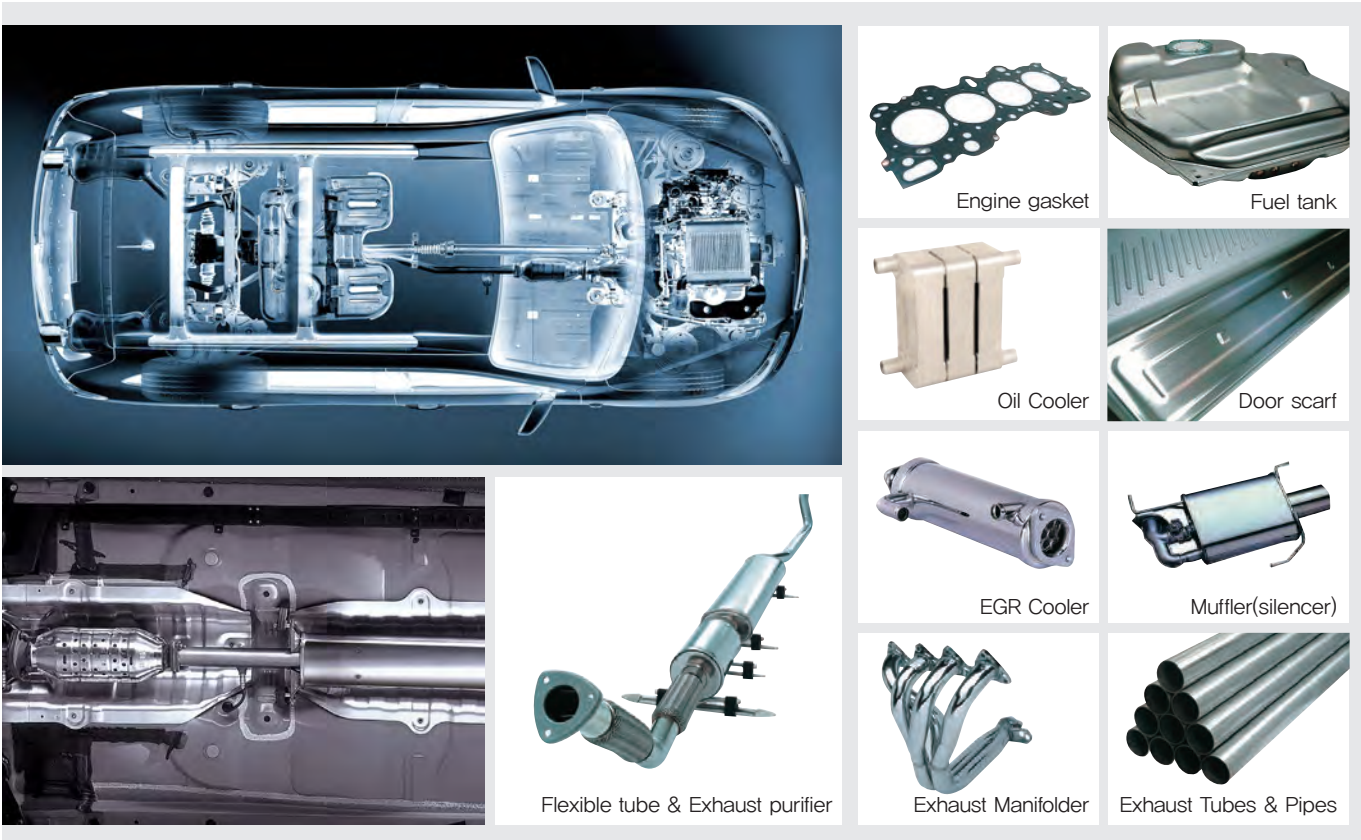


304-Embossed plate



New leader of stainless steel products for automotive

Satisfying the environmental requirements and lowering the oil-consumption, are our key targets, especially for automotive application. To fulfill our responsibility as a sole supplier of HYUNDAI Motor Group, also to expand our services world-wide, strive develop lighter, stronger, high-quality solutions which are environment-friendly and contributing to saving natural resources.



Category	Applications	Features	Steel Grade
Exhaust	Muffler(Silencer), flexible tube, exhaust tube	High temp. anti-corrosiveness, flame resistance	SUS409L, SUS430J1L, SUS436L, 439L, 304
Design	Window & roof molding, door scarf	high gloss, high Drawability	SUS430, 430J1L, 304
Engine	Exhaust manifold, EGR, gasket	high temp. strength, high temp. anti-oxidization	SUS436L, 444, 301(L), 304(L)
Fuel	Fuel tank, fuel/hydraulic pipes	anti-corrosiveness, high Drawability	436L, 439L, 304(L)
Structure	High strength body parts	high strength, high Drawability	301(L), 304(L), 200 series
Others	Air bag, brake, A/V, electric devices	high strength, anti-corrosiveness	301(L), 304(L)
Advance	Fuel cell bipolar plate, air-conditioner, Metallic filter	Strict thickness tolerance, anti-corrosiveness	316L, 304(L)





## Belief & Growth

It is continuous technology development that can produce advanced product. HYUNDAI BNG STEEL will focus on customer value maximization with Unlimited exploration and the best customer service.

“Creating future values  
with high technologies”





# New Product Development

# Embossed Product

## New Product Developments

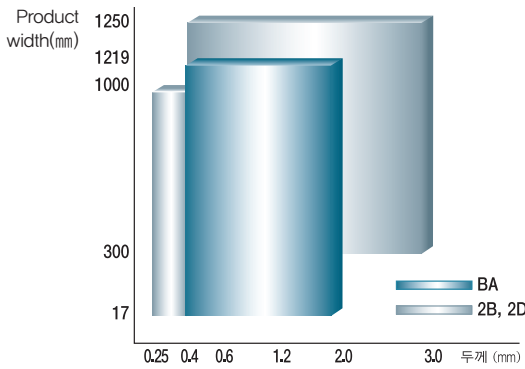


## Embossed steel plate for design

### Product features

Type	Embossing	Etching
Pros.	<ul style="list-style-type: none"><li>High productivity—mass production</li><li>Gentle curve protecting surface contamination and improving anti-corrosiveness</li><li>Management by applications(reproducibility)</li><li>Both sided pattern available</li></ul>	<ul style="list-style-type: none"><li>A variety of patterns available</li><li>Little limitation of pattern design</li></ul>
Cons.	<ul style="list-style-type: none"><li>Pattern limited(work roll process)</li><li>Limited pattern design(size, shape)</li></ul>	<ul style="list-style-type: none"><li>Low productivity —Small Qty production(expensive)</li><li>Using strong acids(Ferric Chloride and etc)<ul style="list-style-type: none"><li>Environmental problems</li></ul></li><li>Corrosion causing surface discoloration and contamination</li></ul>
Pattern cross section		
Others	Inherent high corrosive—resistance of stainless steel	Excellent Drawability

### Range of Production



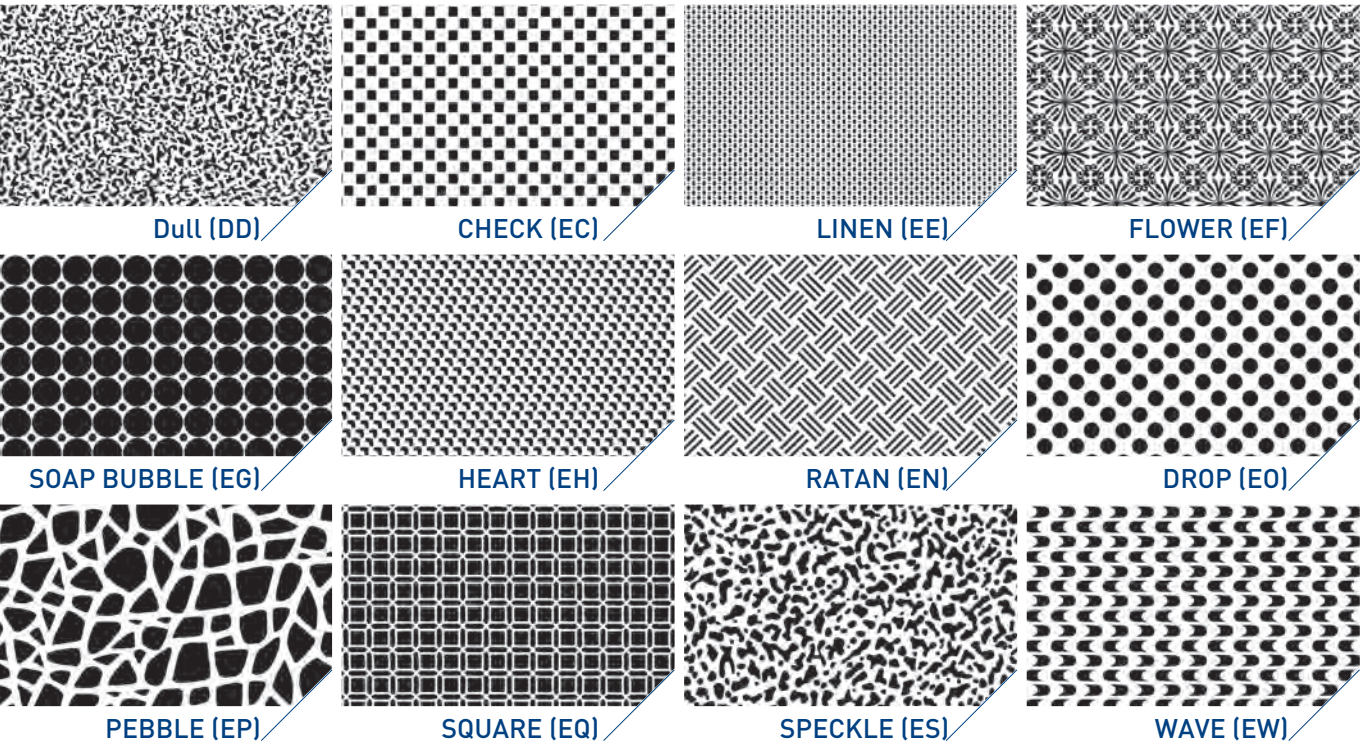
### Applications

interior/exterior construction materials,  
kitchenware materials, ornament pipes and  
electronic parts materials

### Patterns available

Embossing—39 types, Dull—3 types

## Embossed Plate Pattern



※Steel grade, thickness, width and reference plane can be changed and new patterns can be also developed upon discussion between manufacturer and consumer.



Corrosion Resistance

Drawability

Stainless steel has its inherent anti-corrosiveness property than any other materials in types of corrosive environments and is used for a variety of applications such as chemistry, paper, petroleum, nuclear power and food industry.

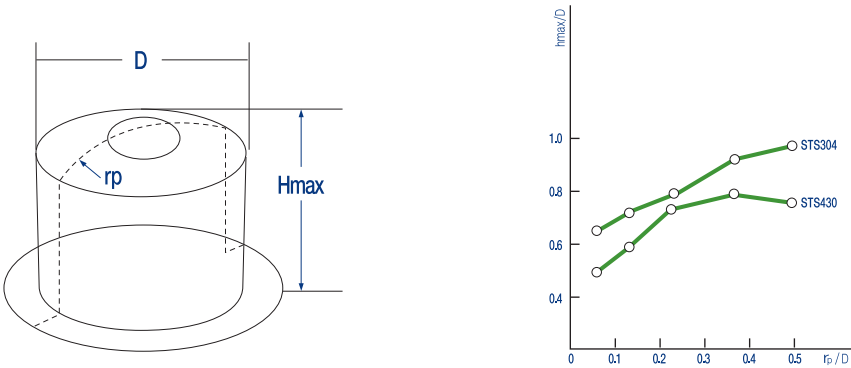
Test solutions	Concentration	Temperature	304	316	410	430
nitric acid	5%	20℃	A	A	A	A
	20%	20℃	A	A	A	A
	50%	boiling	A	A	—	A
	concentrated solution	boiling	D	D	E	D
sulphuric acid	5	20℃	C	B	—	C
	5	boiling	E	C	—	E
	50	20℃	D	C	—	—
	50	boiling	E	D	—	E
	concentrated solution	20℃	A	A	—	A
	concentrated solution	boiling	D	D	—	D
hydrochloric acid		20℃	E	E	E	E
phosphoric acid	1%	20℃	+A	+A	+A	*A
	5%	20℃	A	A	A	A
	10%	20℃	C	A	D	D
oxalic acid	5%	20℃~/boiling	A	A	B	A
	10%	boiling	D	C	—	—
acetic acid	5~10%	20℃	A	A	A	A
	20~100%	20℃	A	A	C	B
	50%	boiling	C	B	—	—
formic acid	5%	20℃~60℃	B	A	D	C
lactic acid	5%	20℃	A	A	C	B
	5%	65℃	B	A	D	B
	10%	boiling	B	A	—	—
butyric acid	5%	20℃~65℃	A	A	A	A
citric acid	5%	20℃~65℃	A	A	A	A
	15%	boiling	A	A	—	B
chromic acid	5%	20℃	A	A	—	B
	10%	boiling	C	B	—	D
iodine			E	D	—	E
fluorine		20℃	E	E	E	E
chlorine gas	dry	20℃	C	B	—	C
	water content	20℃	D	C	—	D
carbon trisulphide		20℃	A	A	—	A
carbon tetrachloride	purity	20℃	A	A	—	A
	5~10%	20℃	*C	*B	D	*C
carbolic acid		20℃	A	A	—	A
tartaric acid		20℃	A	A	C	C

A : Appropriate anti-corrosiveness 0.0089mm/month and lower  
D : Slight anti-corrosiveness 0.25~0.89mm/month  
\* : Vulnerable to bore owing to negligence

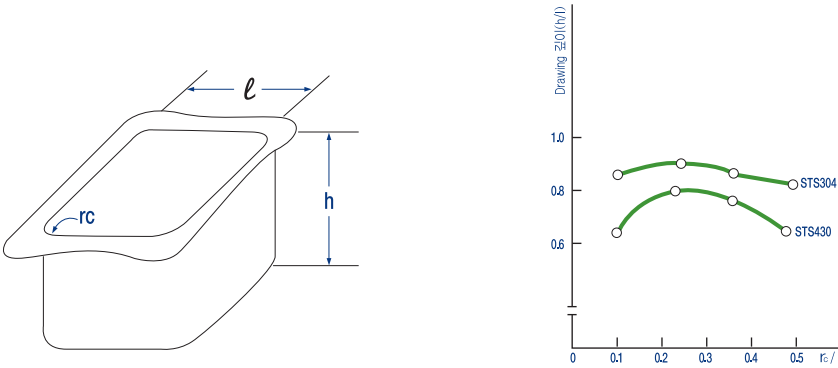
B : Excellent anti-corrosiveness 0.0089~0.089mm/month  
E : No anti-corrosiveness, 0.89mm/month and higher

C : Average anti-corrosiveness 0.089~0.25mm/month  
+ : Vulnerable to corrosion due to existence of hydrochloric acid

| Comparison of STS304 and STS430 |



Cylinder Drawing limit ratio



Square container drawing limit ratio

Steel grade	Limit Drawing ratio (L.D.R.)	Limit Drawing ratio (h max./dp)	Deep Drawing-Bulging drawability, CCV-21 type(mm)
STS304	2.1 ~ 2.2	0.55 ~ 0.58	45.5 ~ 46.0
STS430	1.8 ~ 1.9	0.37 ~ 0.42	48.0 ~ 48.5



| Weld Difficulty Level of Stainless Steel |

Welding methods	Item	Applicable thickness (mm)	Steel Grade				Applications
			304	309	310S	430	
gas welding		t < 1	2	2	2	2	Overlay welding
coating arc welding		t > 0.8	1	1	1	2	Thick plates butting, corner reinforce welding, wide diameter pipe and molding overlay and etc
TIG welding		0.5 < t < 3	1	1	1	3	Thin plates butting, corner reinforce welding, narrow diameter pipe
MIG welding		t > 3	1	1	1	3	Thick plates butting, corner reinforce welding, wide diameter pipe
submerged arc welding		t > 6	1	2	2	3	Thick plates butting, corner reinforce welding, direct welding of large plates for plant
atomic hydrogen welding		0.3 < t < 3	2	2	2	2	Butting, corner reinforce welding, lapping for thin plates no need of tightness such as pressure container
spot welding		0.15< t < 3	2	2	2	3	Welding, airplane, vehicle, kitchenware and etc
Flush butt welding		0.25 < t	2	2	2	4	Butting, airplane, automobile s capillary tube, machine parts
seam welding		0.15< t < 2	2	2	2	3	Butting, automobile, gas burner, freezer s parts, kitchenware, which require air-tightness
soldering		0.3< t < 2	3	3	3	4	Welding small parts of which strength and preciseness rarely matter, especially on a thin plate

(Note) 1. Widely used as one of the most recommended welding methods  
3. Used only for a specific application

2. Ordinarily used but often restricted  
4. Rarely used

| In case of MIG welding, appropriate welding wire(KS D 7026 / JIS Z 3321) |

Steel grade	Welding bar types
STS301, STS301L, STS304, STS304L	Y308, Y308L
STS316, STS316L, STS444, STS317, STS317L	Y316, Y308L, Y310S
STS309S, STS310S	Y309L, Y310L
STS321, STS347	Y347, Y347L
STS430	Y430, Y309, Y310

Except for the following specifications, stainless steel may be applied with a separate standard depending on applications or test methods.

	Standard No.	Title
KS	D 3705	Hot rolled stainless steel plates, sheets and strip
	D 3698	Cold rolled stainless steel plates, sheets and strip
	D 3732	Heat-resisting steel plates and sheets
	D 3534	Cold rolled stainless steel strip for springs
	D 3695	Method of mass calculation for stainless steel plates and sheets, and Heat-resisting steel plates and sheets
JIS	G 4304	Hot rolled stainless steel plates, sheets and strip
	G 4305	Cold rolled stainless steel plates, sheets and strip
	G 4312	Heat-resisting steel plates and sheets
	G 4313	Cold rolled stainless steel strip for springs
	G 4310	Method of mass calculation for stainless steel plates and sheets, and Heat-resisting steel plates and sheets
DIN	17440	Stainless steel – Technical delivery condition for plates, hot rolled strip and bars for pressure purpose drawn wire and forgings
	EN 10029	Hot rolled steel plates 3mm thick or above –Tolerance on dimensions, shape and mass
	EN 10088–2 (17441)	Stainless steel – Part2 : Technical delivery condition for sheet/plate and strip for general purpose
	EN 10204	Metallic products – Types of inspection documents (includes Amendment A1:1995)
	EN 10258 (59381)	Cold rolled stainless steel narrow strip and cut lengths –Tolerances on dimensions and shape
	EN 10259 (59382)	Cold rolled stainless steel wide strip and plate/sheet –Tolerances on dimensions and shape
ISO	6931–2	Stainless steels for spring – Part2: Strip first edition
ASTM	A 167	Standard specification for stainless and heat-resisting chromium – nickel steel plate, sheet and strip
	A 176	Standard specification for stainless and heat-resisting chromium steel plate, sheet and strip
	A240/A240M	Standard specification for stainless and heat-resisting chromium and chromium – nickel stainless steel plate, sheet and strip for pressure vessels
	A480/A480M	Standard specification for general requirements for flat-rolled stainless and heat-resisting steel plate, sheet and strip



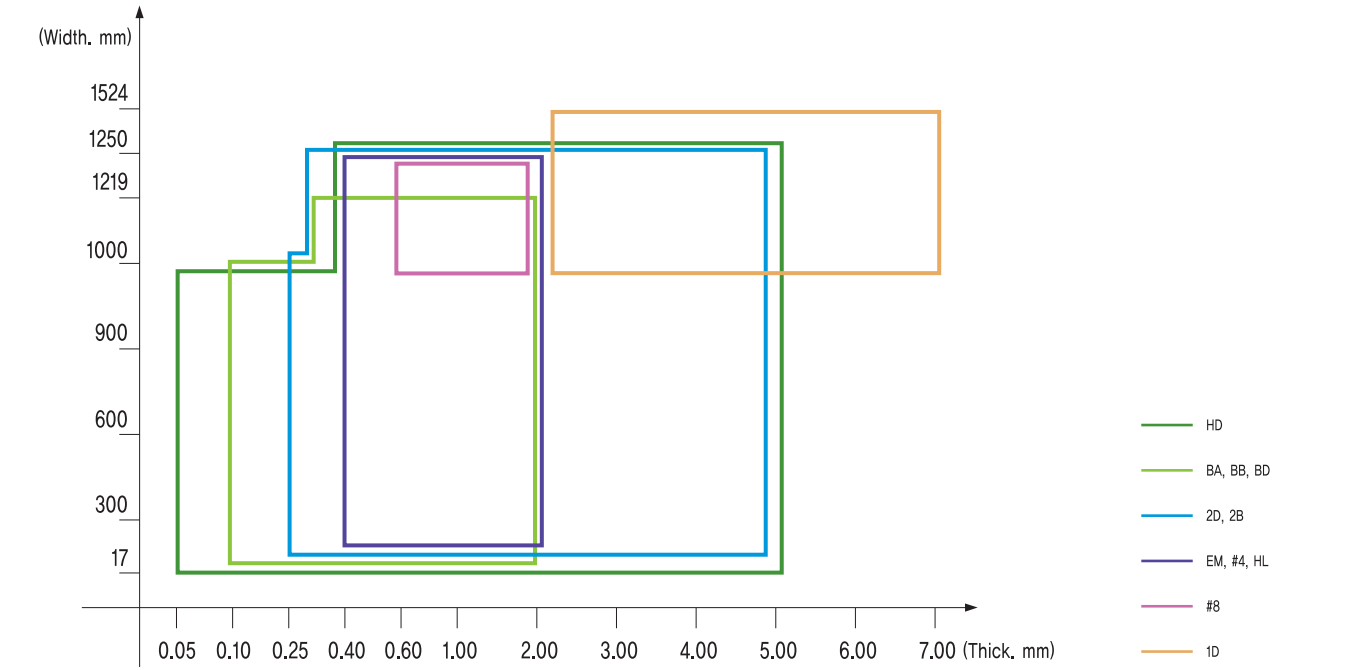
Dimension & Weight

Available Size

| No. by steel grade/dimensions (KS D 3695) |

Steel grade	STS 304 (Special Gravity 7.93)								STS 430 (Special Gravity 7.70)				STS 316 (Special Gravity 7.98)	
dimensions	1m×2m		1m×3m		1m×4m		4'×8'		1m×2m		4'×8'		1m×2m	
Thickness	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton	Weight EA (kg)	No. per metric ton
0.10	1.59	631	2.38	420	3.17	315	2.36	424	1.54	649	2.29	437	1.60	627
0.15	2.38	420	3.57	280	4.76	210	3.54	283	2.31	433	3.43	291	2.39	418
0.20	3.17	315	4.76	210	6.34	158	4.71	212	3.08	325	4.58	218	3.19	313
0.25	3.97	252	5.95	168	7.93	126	5.89	170	3.85	260	5.72	175	3.99	251
0.30	4.76	210	7.14	140	9.52	105	7.07	141	4.62	216	6.87	146	4.79	209
0.40	6.34	158	9.52	105	12.69	79	9.43	106	6.16	162	9.15	109	6.38	157
0.45	7.14	140	10.71	93	14.27	70	10.61	94	6.93	144	10.30	97	7.18	139
0.50	7.93	126	11.91	84	15.86	63	11.78	85	7.70	130	11.44	87	7.98	125
0.55	8.72	115	13.08	76	17.45	57	12.93	77	8.47	118	12.59	79	8.78	114
0.60	9.52	105	14.27	70	19.03	52	14.14	71	9.24	108	13.73	73	9.58	104
0.70	11.10	90	16.65	60	22.20	45	16.50	61	10.78	93	16.02	62	11.17	90
0.80	12.69	79	19.03	53	25.38	39	18.85	52	12.32	81	18.31	55	12.77	78
0.90	14.27	70	21.41	47	28.55	35	21.21	47	13.88	72	20.60	49	14.36	70
1.00	15.86	63	23.79	42	31.72	32	23.57	42	15.40	65	22.88	44	15.96	63
1.20	19.03	53	28.55	35	38.06	26	28.28	35	18.48	54	27.46	36	19.15	52
1.50	23.79	42	35.69	28	47.58	21	35.35	28	23.10	43	34.33	29	23.94	42
1.70	26.96	37	40.44	25	53.92	19	40.06	25	26.18	38	38.90	26	27.13	37
1.80	29.55	35	42.82	23	57.10	18	42.42	24	27.72	36	41.19	24	28.73	35
2.00	31.72	32	47.58	21	63.44	16	47.13	21	30.80	32	45.77	22	31.92	31
2.20	34.89	29	52.34	19	69.78	14	51.85	19	33.88	30	50.34	20	35.11	28
2.50	39.65	25	59.48	17	79.30	13	58.92	17	38.50	26	57.21	17	39.90	25
2.80	44.41	23	66.61	15	88.82	11	65.99	15	43.12	23	64.07	16	44.69	22
3.00	47.58	21	71.37	14	95.14	11	70.70	14	46.20	22	68.65	15	47.88	21
3.20	50.75	20	76.13	13	101.50	10	75.42	13	49.28	20	73.23	14	42.07	20
3.50	55.51	18	83.27	12	111.02	9	82.49	12	53.90	19	80.09	12	55.86	18
3.80	60.27	17	90.40	11	120.54	8	89.56	11	58.52	17	86.96	11	60.65	16
4.00	63.44	16	95.06	11	126.88	8	94.27	11	61.60	16	91.54	11	63.84	16
4.20	66.61	15	99.92	10	133.22	8	98.98	10	64.68	15	96.11	10	67.03	15
4.50	71.37	14	107.06	9	142.74	7	106.05	9	69.30	14	102.98	10	71.82	14
5.00	79.30	13	118.95	8	158.60	6	117.84	8	77.00	13	114.42	9	79.30	13

| Dimensions by production surface |



Other dimensions unspecified in the above range are also available upon discussion of customer and manufacture

| Standard thickness |

Type		Standard thickness(mm)										Remarks
Cold rolling	steel plate	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	KS D 3698	
		1.5	2.0	2.5	3.0	4.0	5.0	6.0	7.0			
	coil	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
		1.2	1.5	2.0	2.5	3.0	4.0	5.0				
		ultra thin stainless plate		0.03	0.05	0.08	0.10	0.12	0.15	0.20		0.25

Other dimensions save for the above dimensions and the tolerance are also available upon discussion of customer and manufacture



Protection Films & Packaging

Contacts

| Stainless steel surface protective film |

Type	Mark	Thickness (μm)	Color	Logo	Application	
					Product	Film
PVC (Poly VinylChloride)	WO	100	White	Printing	BA, #8	Simple cutting/ bending
	VO				EM, #4	Slight Drawing
	BO	80	Blue	No Printing (translucent)	2B, HL, #4, EM	Export
	RO	80	Black & White		Every Surface	General Forming
PE(Poly Ethylene)	PO	50	translucent	No Printing (translucent)	#3,D5	Forming
					Surface Process	simple surface protection

※ Since it is hardened if leaving alone for a long time, it should be immediately removed and stored indoors free of direct sunrays.  
※ Please contact us for other surface protective film.

| Packing methods |



Domestic coil packing



Export coil packing



Domestic sheet packing



Export sheet packing

| Technical Advice |

Major Issues	Customer	Contact Number	Details
New Products/ Goods Application Development	Changwon	+82-55-268-4198, 4150, 4143, 4105	1. Review steel grade and surface for new order 2. Review localization of imported materials 3. Change steel grade in use 4. Develop new product and application
Development	Changwon	+82-55-268-4142, 4151	1. Technical support for HRC & Processes
Customer Satisfaction	Seoul	+82-2-3467-0065, 0066	1. Technical service for customers 2. Complaints & Claims Service
	Changwon	+82-55-268-4101	

| How to order |

Steel plate products may have the best fitness as their steel grade and physical properties are selected depending on application, environment and process conditions.

1. Requisites for Placing Order

- Steel Grade : Standard
- Applicable Standards : KS, JIS, AISI, ASTM, DIN EN, TUV and etc
- Applications : work process and detail environment conditions using materials
- Product type : Coil, Sheet
- Product dimensions : thickness, width, length
- Supply conditions : protective plastic surface, packing, unit, packing method
- QA items
- Desired delivery time, delivery method and destination

2. Sales Contacts

Section	Office	Contact Number	Fax Number
Automobile/Railway	Seoul	+82-2-3467-0017, 0021, 0023	+82-2-563-1292
Coil center/Agent		+82-2-3467-0011, 0013, 0015, 0019, 0022, 0025	+82-2-563-1292
Actual demand		+82-2-3467-0012, 0016, 0018, 0020	+82-2-563-1292
Precision sales		+82-2-3467-0040, 0041, 0043, 0044	+82-2-563-1292
Overseas sales		+82-2-3467-0090~0092, 0095	+82-2-564-0986
Southern area sales	Busan	+82-51-313-4080	+82-51-313-4081



# Belief & Growth

## Automotive Parts Business

HYUNDAI BNG STEEL will continue to focus on R&D for lightweight automobile parts and eco-friendly new materials for its sustainable growth and development. We will also be committed to quality assurance and management efficiency.





Gwangju Plant



| Address | 47, Hanamsandan  
7beon-ro, Gwangsan-gu,  
Gwangju, Korea

| Total Area | 9,917m²

| Products | Sand Core Package for  
Engine Block/Head

| Capacity | 530,000 Unit

Production Capacity of products

Product	A2 Cylinder block	KJ Cylinder block / Head	U2 Cylinder block (1.5/1.6L)	Lambda 2 camshaft	S2 Cylinder block
Capacity (Unit/year)	160,000	160,000	160,000	700,000	50,000
Vehicle	Starex/Bongo3/ Porter	Bongo(old model)	Accent/Avante/ i20/i30	Grandeur 3.0 /Genesis/K7/K9	Veracruz/Mohave

Major Products



A2 Cylinder block



U2 Cylinder block



S2 Cylinder block



Ulsan Plant



| Address | 90, Napdo-ro,  
Nam-gu, Ulsan, Korea

| Total Area | 74,473m²

| Products | Aluminum Engine Block  
for Automobile

| Capacity | 80,000 Unit

Production capacity

Material	IRON	ALUMINUM
Capacity(ton/year)	2,500	1,500
alloy	FC25, FC30, CGI, FCD40, 50, 70	AC4CH, AC2B, AC4B

Major Products

| Engine Block & Head |



Item	I4 block	V8 block	I4 block (B/S)	I4 head	Sub frame	T/M part
Fuel	Diesel	Gasoline	Gasoline	Gasoline	Rear	A/S
Filling	SNPC	GSC	SNPC	GSC	GSC	GSC
Material	A356-T6	A356-T6	A356-T6	A356-T6	A356-T6	A356-T6

| Off road & Industry part |



Item	I3 block	I4 block	I3 head	High pressure pump parts		
Fuel	Diesel	Diesel	Diesel	Center	Gear	Front
Filling	GSC	GSC	GSC	GSC	GSC	GSC
Material	FC25	FC25	FC25	A356-T6	A356-T6	A356-T6



Manufacturing Certificates

QA System

INTERNATIONAL STANDARDIZATION ORGANIZATION 9001

INTERNATIONAL STANDARDIZATION ORGANIZATION 14001

KOREAN INDUSTRIAL STANDARDS

JAPANESE INDUSTRIAL STANDARDS

TUV RHEINLAND INDUSTRIE SERVICE GMBH

PRESSURE EQUIPMENT DIRECTIVE

DET NORSKE VERITAS

KOREAN REGISTER OF SHIPPING

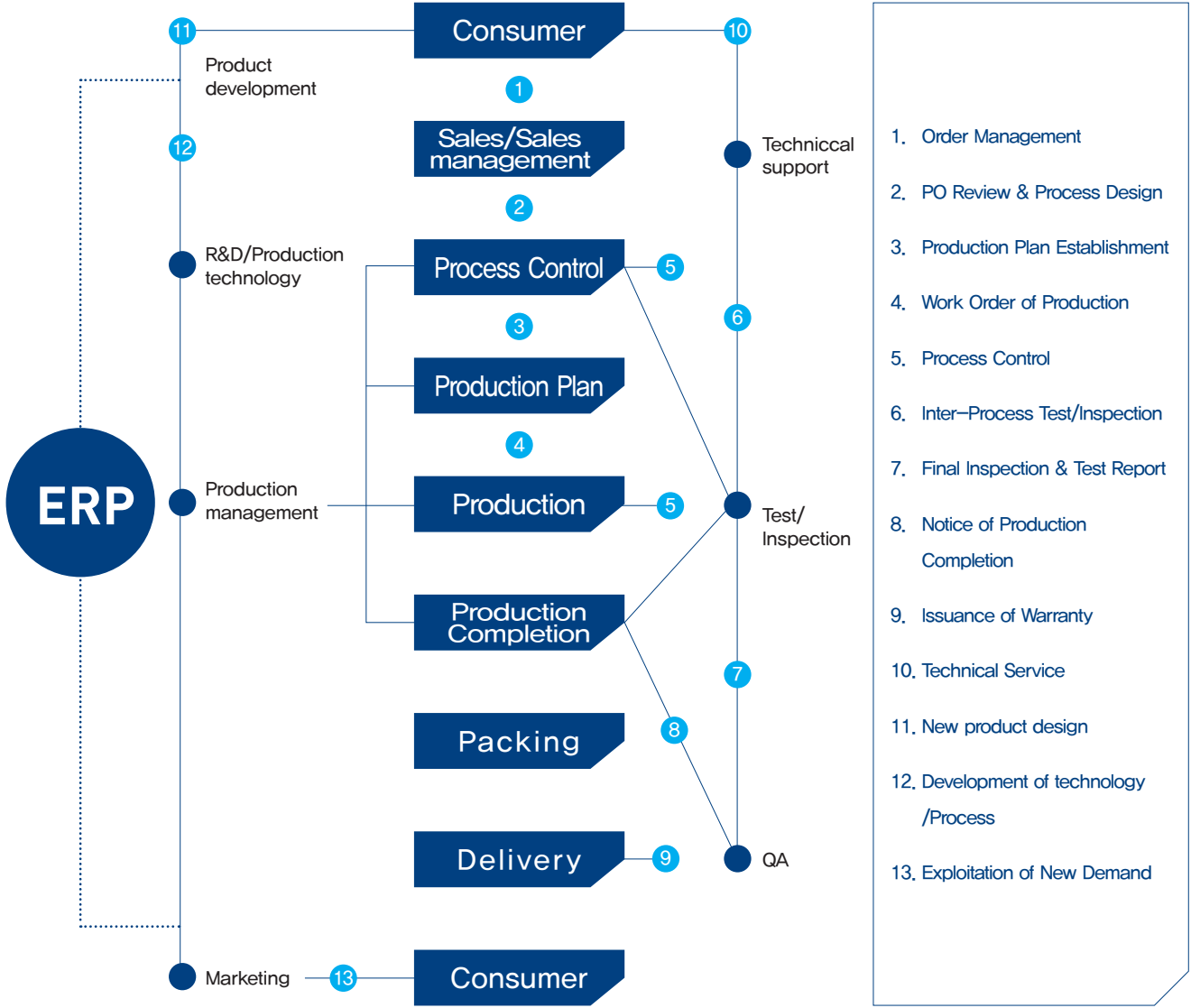
Information Security Management System ISO/IEC 27001

Car Management System ISO/TS 16949

SAFETY&HEALTH Management System (Domestic) KOSHA18001

SAFETY&HEALTH Management System (Foreign) KOSHA18001

Each process is completely controlled and quality-assured via online network of ERP System, which enables us to achieve high-performances.





# Social Responsibility



HYUNDAI BNG STEEL  
will lead sharing culture  
and open bright future.

## CSR Charter

HYUNDAI BNG STEEL is proud to announce its Corporate Social Responsibility (CSR) Charter to fulfill its duty as a global corporate citizen and share its value with all stakeholders through the balance of growth and sharing on the basis of a corporate culture of respect and trust.

HYUNDAI BNG STEEL understands that reliable management, environmental management, and social management constitutes the fundamentals of business activity and promises to continuously practice them. In addition, we recognize that fulfilling the principles of CSR will be a lasting source of growth in the long term and will make sure it benefits the staff, suppliers, shareholders, customers, communities and all mankind.

### We facilitate the self-realization of our staff and establish mutually beneficial relationships with our suppliers

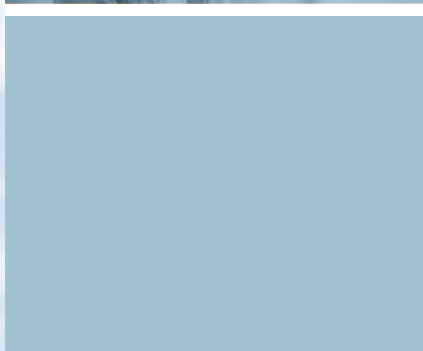
- 1. We build rational labor-management relations on the basis of corporate culture of respect and trust
- 2. The entire staff shall share and practice the spirit of service and eco-friendliness.
- 3. We assist suppliers in strengthening their global competitiveness with mutual cooperation and green partnership.

### We raise our shareholder's value and deliver an environment of trust and satisfaction to our customers.

- 1. We enhance shareholders' rights and benefits by creating economic and social values.
- 2. We protect customers' private information and boost customer satisfaction by providing the best products and services.
- 3. We collect opinions of shareholders and customers in all business operations and share the value of sustainable growth.

### We, as a member of a global civic society, contribute to the shared prosperity of humankind.

- 1. We practice loving our neighbors through various activities that provide social contributions.
- 2. We comply with global environmental regulations and agreements and get actively involved in environmental conservation.
- 3. We enhance mutual understanding and contribute to the development of a global society through vigorous cultural exchanges.



## Beatiful accompany with HYUNDAI BNG STEEL

HYUNDAI BNG STEEL leads to make a peaceful world with continuous and systematic social contribution activities. We encourage children to dream their bright future by giving and sharing our asset.





# Leading the new era of steel

As an eco-friendly company, we will lead a new era in the steel industry and achieve world's best competitiveness by providing high-standard products and services based on organic, cooperative relations

[www.hyundai-bngsteel.com](http://www.hyundai-bngsteel.com)



#### Changwon Head office/plant

124, Jeokhyeon-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea, 642-370

TEL. +82-55-268-4114  
FAX. +82-55-268-4134



#### Seoul office

512, Teheran-ro, Gangnam-gu, Seoul, Korea, 135-845

TEL. +82-2-3467-0070  
FAX. +82-2-563-1291



#### Ulsan plant

90, Napdo-ro, Nam-gu, Ulsan, Korea, 680-090

TEL. +82-70-4348-0345  
FAX. +82-70-8255-8291



#### Gwangju plant

47, Hanamsandan 7beon-ro, Gwangsan-gu, Gwangju, Korea, 506-253

TEL. +82-62-959-1700  
FAX. +82-62-959-1705



#### Busan office

99, Saebyeok-ro, Sasang-gu, Busan, Korea, 617-843

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