



P O S C O C A T A L O G U E

냉연강판

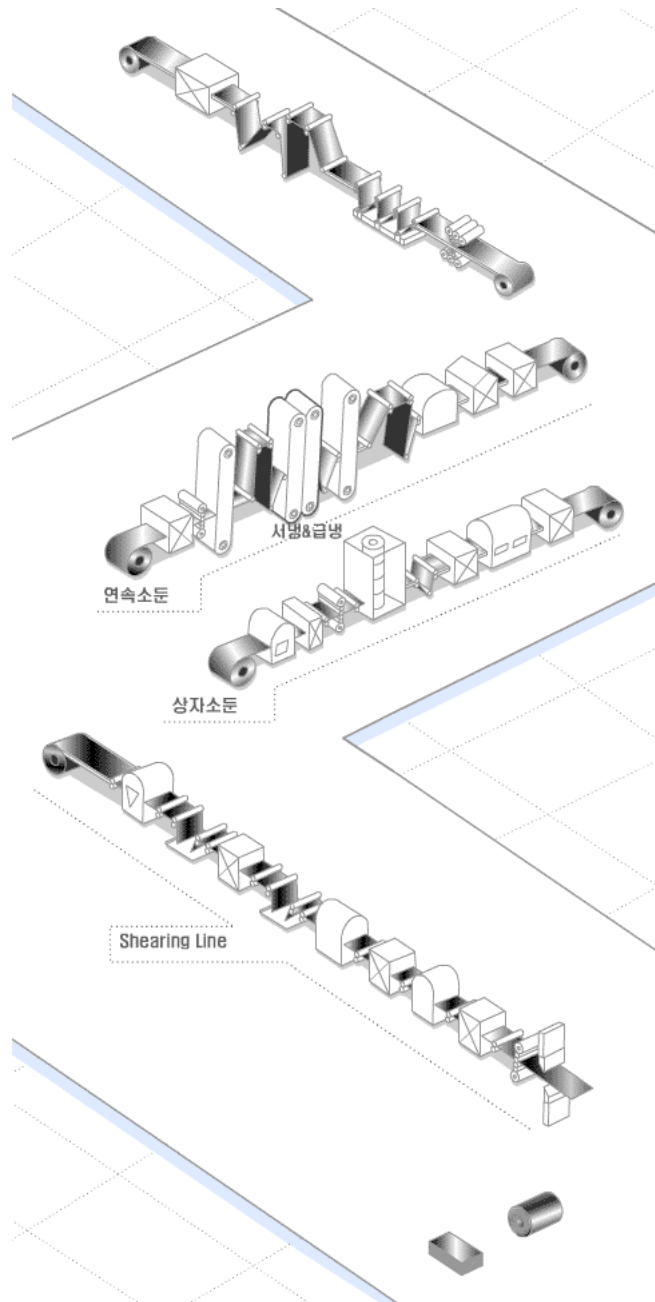
2001
POSCO

제조공정



가

냉연강판 제조공정 >> 포항제철은 현대사회의 필수소재로 각광받고 있는 냉연강판을 고객의 요구에 맞게 공급하고자 노력하고 있습니다.



제조설비



40%~90%



가

가



가

1%



설비사양

1.

		1	2
		PL	TCM
가	(mm)	1.2 - 5.0	2.0 - 5.0
	(mm)	500 - 1,270	620 - 1,670
	()	28	35

		1	2
		4Hi x 4STD, 6Hi x 1STD	6Hi x 4STD
가	(mm)	0.15 - 1.6	0.4 - 2.0
	(mm)	500 - 1,270	620 - 1,670
	()	28	35

		1	2
Line	(mpm)	500	450
가	(mm)	0.15 - 0.8	0.4 - 2.0
	(mm)	500 - 1,270	620 - 1,650
	()	28	35

		1
가	(mm)	0.15 - 1.6
	(mm)	500 - 1,270
	()	28

2.

		1	2	3	4
		TCM	TCM	TCM	TCM
가	(mm)	1.4 - 6.0	1.4 - 6.0	1.5 - 5.0	1.2 - 6.0
	(mm)	750 - 1,880	710 - 1,570	600 - 1,270	600 - 1,890
	()	40	35	28	35

		1	2	3	4
		6Hi x 4STD	6Hi x 4STD	6Hi x 5STD	6Hi x 5STD
가	(mm)	0.2 - 3.0	0.2 - 2.3	0.15 - 2.0	0.4 - 2.3
	(mm)	720 - 1,860	720 - 1,570	600 - 1,270	700 - 1,890
	()	40	40	28	35



		1	2	3	4
Line	(mpm)	430	430	450	430
가	(mm)	0.3 - 1.6	0.4 - 2.0	0.2 - 1.2	0.4 - 2.3
	(mm)	720 - 1,650	720 - 1,570	600 - 1,270	700 - 1,890
	()	40	35	28	35



		1
가	(mm)	0.2
	(mm)	720 - 1,860
	()	40

용도소개



Roof, Fender, Hood, Quarter, Oil Pan, Spring House



가 가



가 가 , 가 , 가 가 가 3



Floor, Bracket, 가 , 가 , TRIP , 가 Center Door
Bumper , Rail Lever, Parking Brake , TRIP

품질특성

1.

1	CSP 1 CSP 1D	, 가 ,	Door, ,가
2	CSP 2	가 CSP 1 가	Oil Pan
3	CSP 3	가 CSP 2 가	Roof, Fender,Hood
	CSP 3N	가	
	CSP 3E	가 CSP 3N 가	Quarter Spring House
	CSP 3X	Super 가 CSP 3E 가	Side Panel Fuel Tank

2.

	CSP 30 CSP 32 CSP 34 CSP 37 CSP 37P CSP 58	가 (가)	
	CSP 1-H CSP 1-2H CSP 1-4H CSP 1-8H	가	Motor Core

3.

	CESP 2-C CESP 2-D CESP 2-P	High Titanium 가 Fish Scale, Pin Hole Boron 가 가 (800~850)	, , , , Pan,

4.

	CHSP 45C CHSP 60C	(Nb, Cr, V) 가 가 , 가	Seat, Rail Lever Parking Barke
가	CHSP 35R CHSP 40R *CHSP 45R	P 가 가 Panel	Center Floor, Bracket
가	CHSP 35E CHSP 40E CHSP 45E	C,N 가 r 가	Fender,Hood
	*CHSP 35EB	가 가 가 CHSP35 DENT	
	*CHSP 60DP CHSP80TR CHSP 100DP	2 (Ferrite+Martensite) 3 (Ferrite+Martensite+ Austenite) (YP/TS)가 가	Door Bumper

: '*'

5. DBTT 가

		D/R DBTT()			가	
		1.92	1.80	1.80		
CR	35E	-30	-50	-70	가	B 가
	35S	-40			가	B 가
	40E	-50	-70	-90	가	B 가
	45E	-20	-50	-60		B 가

제품규격

1.

1.



(1993)

					(kgf/mm ²)	(%)						HRB	HV	(/)
						0.25 - 0.45	0.45 - 0.60	0.60 - 1.0	1.0 - 1.6	1.6 - 2.5	2.5 - 3.0			
1		CSP 1		A	(28)	(32)	(34)	(36)	(37)	(38)	(39)	(60)	(105)	
												(65)	(115)	
			1/8	8H	(38.42)	-	-	(25)				50~71	95~130	
			*1/4	4H	(38.50)	-	-	(10)				65~80	115~150	0.5
			*1/2	2H	(45.60)	-	-	-				74~89	135~185	1.0
				H	(50)	-	-	-				85	170	-
2	가	CSP 1D		A	28	33	35	37	38	39	40	(57)	(105)	
				S										
3	가	CSP 2		A	28	34	36	38	39	40	41			
				S										
	가	CSP 3		A	28	36	38	40	41	42	43			
	가	CHSP 35 S		S	35	34	34	36	37	38	40			
	가	CSP 3N		S	28	36	38	40	41	42	43			
	가	CSP 3E		S	28	44	45	46	48	48	50	(55)	(101)	
	Super 가	CSP 3X		S	27	-	-	51	53	53	-			

1. CSP 1

2.

3. ()

4. CSP 3N CSP 3F

6

'-E' .() CSP 1D-E

CSP IT

5. 0.6mm

6. (*)

7. Bright 'B' 가 .() CSP1-8B, CSP1-SB, CSP2-SB

▶ (1993)

		(mm)		(%)				(kgf/mm ²)	(kgf/mm ²)	(%)	(/)
				C	Mn	P	S				
1		0.4 - 3.0	CSP 30	0.20	0.60	0.04	0.04	18	30	26	
2			CSP 32					22	32	24	1.0
3			CSP 34					24	34	22	1.5
4	A		*CSP 37	0.20	0.90	0.04	0.04	28	37	20	2.0
	B		*CSP 37P	0.15	0.60	0.20	0.04				
5			*CSP 58	0.20	0.60	0.04	0.04	56	58	-	-

1. 0.2% Cu 가 가

2. : 5

3.(*)

▶ (1993)

	(mm)		(%)				(%)							
			C	Mn	P	S	0.40 - 0.60	0.60 - 1.00	1.00 - 1.60	1.60 - 2.00	2.00 - 2.30		/	
2	0.2 - 1.6	CESP 2-C	0.08	0.50	0.030	0.030	34	36	37	38	39	5		5
2 가	0.4 - 2.3	CESP 1-S	0.008	0.50	0.030	0.030	35	37	38	39	-			
2 가	0.4 - 2.3	SPP	0.008	0.50	0.030	0.030	36	38	39	40	-			

1. Ti, Nb, Zr, V, B 가 C 0.012%

2. 0.6mm

3. CESP2-C, CESP2-D CESP2-P

▶ (1993)

	(mm)			(kgf/mm ²)	(kgf/mm ²)	(%)					() ¹
						0.4-0.6	0.6-1.0	1.0-1.6	1.6-2.0	2.0-2.3	
가	0.4 2.3	CHSP 45C		45	28	24	26	27	28	29	
		CHSP 60C		60	36	15	17	18	18	19	1.0
		CHSP 35R		35	19	32	34	35	36	38	
		CHSP 40R		40	23	29	31	32	33	35	
		*CHSP 45R		45	27	27	29	30	30	31	
가		CHSP 35E		35	17	32	34	35	36	37	
		CHSP 40E		38	21	30	32	33	34	35	
		CHSP 45E		44	24	32	33	34	35	36	
		*CHSP 60DP	(Dual PHase)	60	42	19	21	22	22	-	1.0
		CHSP 80TR		80	60	-	-	16	16	16	3.0
		*CHSP 35EB		35	-	32	34	35	36	38	

: 1.CHSP 35E,CHSP 40E

2.

3.

4.(*)

CHSP 35E-E,CHSP 40E

(Dull Finishing)

2.KS

KS D 3512(1986)

			(%)						kgf/mm ² (N/mm ²)	(%)								(/)
			C	Si	Mn	P	S			0.25 0.40	0.40 0.60	0.6 1.0	1.0 1.6	0.6 2.5	2.5	HRB	HV	
1	SCP 1 ()		0.12 _*	-	0.50 _*	0.040 _*	0.045 _*	A S	28	(32)	(34)	(36)	(37)	(38)	(39)	57 _* 67 _*	105 _* 115 _*	
		1/8												50 ~ 71	95~ 130	0.5		
		1/4						1/8H	30~42 (294~412)	25 _*								
		1/2						1/4H	38~50 (373~490)	10 _*								
								1/2H	45~60* (441~588)	-								
							H	56 _* (549)							85	135~ 185 170	-	
2	SCP 2 ()		0.10 _*	-	0.45 _*	0.035 _*	0.035 _*	A S	28 (275)	34	36	38	39	40	41	57 _* 65 _*	105 _* 115 _*	
3	SCP 3 ()		0.08 _*	-	0.40 _*	0.030 _*	0.030 _*	A S	28 (275)	36	38	40	41	42	43	57 _* 65 _*	105 _* 115 _*	

: 1. *

2. 1

3.

4. 0.6mm

5. 3

6. (*)

7. 1~3

30mm

가 ()

6

(: mm)

\	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6
CSP 1	7.2	7.8	8.4	8.8	9.1	9.4	9.6	10.0	10.3	10.5
CSP 1D	7.6	8.2	8.8	9.2	9.5	9.8	10.0	10.4	10.7	10.9
CSP 2	8.0	8.6	9.2	9.6	9.9	10.2	10.4	10.8	11.1	11.3

3.JIS

JIS G 3135(1991)

가

		(mm)	N/mm ² (kgf/mm ²)	N/mm ² (kgf/mm ²)	(%)							
					0.6 1.0	1.0 2.3			/			
가	SPFC 340	0.6	175 (18)	340 (35)	34	35	JIS 5	180 °		JIS 3		
	SPFC 370	2.3	205 (21)	370 (38)	32	33						
가	SPFC 390	0.6	235 (24)	390 (40)	30	31						
	SPFC 440		265 (27)	440 (45)	26	27						
	*SPFC 490	2.3	295 (30)	490 (50)	23	24					0.5	
	*SPFC 540		325 (33)	540 (55)	20	21						1.0
	SPFC 590		355 (36)	590 (60)	17	18						
	SPFC 490Y	0.6	225 (23)	490 (50)	24	25						
	SPFC 540Y	1.6	245 (25)	540 (55)	21	22					0.5	
	*SPFC 590Y		265 (27)	590 (60)	18	19						1.0
	*SPFC 780Y	0.8	365 (37)	780 (80)	13	14					3.0	
	*SPFC 980Y	1.4	490 (50)	980 (100)	6	7						4.0
	*SPFC 340H	0.6 1.6	185 (19)	340 (35)	34	35						

1. :

: 1 ,
3
,

JIS G 3133(1998)

	(%)				(%)					(mm)												
										(mm)												
	C	Mn	P	S	0.4 0.6	0.6 1.0	1.0 1.6	1.6 2.0		0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6			
SPP	0.008	0.50	0.040	0.040	36	38	39	40	JIS 5	7.6	8.2	8.8	9.2	9.5	9.8	10.0	10.4	10.7	10.9		JIS 3	

1. :
2. : C
3.Ti,Nb,Zr,V,B 가 C0.012% 가
4. 0.60mm
- 가

JIS G 3141(1987)

				(%)					kgf/mm ² (N/mm ²)	(%)								(/)	
				C	Si	Mn	P	S		0.25	0.40	0.6	1.0	0.6	2.5	HRB	HV		
										0.40	0.60	1.0	1.6	2.5					
	1	SPCC		0.12 _*	-	0.50 _*	0.40 _*	0.45 _*	(270)	(32)	(34)	(36)	(37)	(38)	(39)	57 _* 67 _*	105 _* 115 _*		
			1/8						25 _*					50 - 71	95 - 130				
			1/4						10 _					65 - 80	115 - 150	0.5			
			*1/2						-					74 - 89	135 - 185	1.0			
									-					85	170	-			
가	2	SPCD		0.10 _*	-	0.45 _*	0.35 _*	0.35 _*	270	34	36	38	39	40	41	57 _* 65 _*	105 _* 115 _*		
가	3	SPCE		0.08 _*	-	0.40 _*	0.30 _*	0.30 _*	270	36	38	40	41	42	43	57 _* 65 _*	105 _* 115 _*		

: 1. 1 T SPCCT () ,
2. * ,
3. 3 , N SPCEN .
4. 30mm .
5. 0.6mm .
6. 3 6 .
7. 1 3 .

(: mm)

\	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6
1	7.2	7.8	8.4	8.8	9.1	9.4	9.6	10.0	10.3	10.5
2	7.6	8.2	8.8	9.2	9.5	9.8	10.0	10.4	10.7	10.9
3	8.0	8.6	9.2	9.6	9.9	10.2	10.4	10.8	11.1	11.3

4.ASTM

			(%)											
			C	Si	Mn	P	S	Cu						
ASTM A366-91			0.15	-	0.60	0.035	0.040	0.20						
ASTM A619-91	가		0.10	-	0.50	0.025	0.035	-	-					
ASTM A620-91	가 Specially Killed		0.10	-	0.50	0.025	0.035	-	-					
ASTM A424-92		Type 1	0.008	-	0.40	-	0.020	-	(L C)					
		Type 2	0.05		0.50									
		Type 3	0.02		0.35									
ASTM A611-91		Grade A	0.20	-	0.60	0.045	0.035	0.20	(Ksi)	(Ksi)	(%)			
		Grade B							25	42	() 2inch or 50mm	26	1/2	
		C	Type 1			0.20			0.035	30		45	24	1
			Type 2			0.15			0.020	33		48	22	11/2
		D	Type 1		0.20	0.90			0.04	40		52	20	2
			Type 2		0.15	0.60			0.20	80	82		-	
		E	0.20		0.60	0.04			-					

: A366-91 : 1. A568
2. HRB60
3.

A424-92 : 1. A568
2. Type 1 open ,Type 2
3. Type 2 Sagging,B

A619-	1.	Rimmed	
91 :	2.	A568	.
A611-	1.	A568	.
91 :	2.	Type1 : open	
	3.	Type2 :	
A620-	1.	Al-Killed	
91 :	2.	A568	.

5.DIN

■ DIN 1623 Part 1(1983) ()

		(%)						(N/mm ²)	(N/mm ²)	(%)		()		
		C	Si	Mn	P	S	N			Lo=80mm		HRB	HRF	HR30T
St 12	-	0.10	-	-	-	-	0.007	280	270 - 410	28	-	65	94	60
USt 13	U	0.10						250	270 - 370	32		57	90	55
RRSt 13	RR	0.10					-	240	270 - 370	34		55	88	53
St 14	RR	0.08						210	270 - 350	38		50	86	50

DIN 1623 Part2(1986)

()

		(%)						(N/mm ²)	(N/mm ²)	(%) Lo=80mm		()		
		C	Si	Mn	P	S	N					P	S	N
St 37-2G	-	0.17	-	-	0.040	0.035	0.009	215	360 ~ 510	20	0.5	-	-	-
USt 37-2G	U						0.007							
St 37-3G	RR						-							
St 44-3G	RR	0.20	-	-	0.040	0.035	-	245	430~ 580	18	1.0	-	-	-
St 52-3G	RR							325	510~ 680	16	1.0			
St 50-2G	R	0.40	-	-	0.050	0.050	0.009	295	490~ 660	14	-	-	-	-
St 60-2G	R	0.40						335	590~ 770	10				
St 70-2G	R	0.65						365	690~ 900	6				

:1.U: . R: , RR:Special .

2. .

6.BS

BS 1449 Part 1(1983)

				(%)					(N/mm ²)	(N/mm ²)	(%)		(/)	
				C	Si	Mn	P	S				Lo=80mm		Lo=200mm
가	Grade 1 가	CR1	Al Stabilized	0.08	-	0.45	0.025	0.030	Cu 가	140	280	38	29	
	Grade 2 가	CR2	-	0.08	-	0.45	0.030	0.035		140	280	36	27	
	Grade 3 가	CR3	-	0.10	-	0.50	0.040	0.040		(140)	(280)	(34)	(25)	
	Grade 4 가	CR4	-	0.12	-	0.60	0.050	0.050		(140)	(280)	-	-	
	Grade34/20	CR	-	0.15	-	1.20	0.050	0.050		200	340	29	21	2
	Grade37/23			0.20						230	370	28	20	

: 1.CR : Cold Rolled

2.CR3,CR4

Stabilized 가 .

3.Grade 3,4

.()

4.Grade 34/20,37/23 Rimmed(R),Balanced (B),Killed(K)

가 .

5.

지수허용차

1.



(: mm)

\	250 400	400 630	630 1000	1000 1250	1250 1600	1600
0.25	± 0.030	± 0.030	± 0.030	± 0.030	-	-
0.25 0.40	± 0.035	± 0.035	± 0.040	± 0.040	-	-
0.60 0.80	± 0.040	± 0.040	± 0.050	± 0.050	± 0.060	-
0.60 0.80	± 0.045	± 0.045	± 0.060	± 0.060	± 0.060	± 0.070
0.80 1.00	± 0.050	± 0.050	± 0.060	± 0.070	± 0.080	± 0.090
1.00 1.25	± 0.050	± 0.060	± 0.070	± 0.080	± 0.090	± 0.110
1.25 1.60	± 0.060	± 0.060	± 0.090	± 0.100	± 0.110	± 0.130
1.60 2.00	± 0.080	± 0.080	± 0.110	± 0.120	± 0.130	± 0.150
2.00 2.50	± 0.080	± 0.090	± 0.130	± 0.140	± 0.150	± 0.170
2.50 3.00	± 0.090	± 0.100	± 0.150	± 0.160	± 0.170	± 0.200

KS, JIS

(: mm)

\	600	600 1000	1000 1250	1250 1600	1600
0.25	± 0.030	± 0.030	± 0.030	-	-
0.25 0.40	± 0.040	± 0.040	± 0.040	-	-
0.40 0.60	± 0.050	± 0.050	± 0.050	± 0.060	-
0.60 0.80	± 0.060	± 0.060	± 0.060	± 0.070	± 0.080
0.80 1.00	± 0.070	± 0.070	± 0.080	± 0.090	± 0.100
1.00 1.25	± 0.080	± 0.080	± 0.090	± 0.100	± 0.120
1.25 1.60	± 0.090	± 0.100	± 0.110	± 0.120	± 0.140

1.60	2.00	± 0.100	± 0.110	± 0.120	± 0.140	± 0.160
2.00	2.50	± 0.120	± 0.130	± 0.140	± 0.160	± 0.180
2.50	3.15	± 0.140	± 0.150	± 0.140	± 0.180	± 0.200
3.15		± 0.160	± 0.170	± 0.190	± 0.200	-

2.



, KS, JIS

(: mm)

EDGE TYPE		
MILL EDGE	1250	+ 7,0
	1250	+ 10,0
SLIT EDGE	1250	+ 3,0
	1250	+ 4,0

3.



, KS, JIS

(A)

(:mm)

2000		+10,0
2000	4000	+15,0
4000	6000	+20,0

:

,

A

A

B

.

(B)

(:mm)

1000		+3,0
1000	2000	+4,0
2000	3000	+6,0
3000	4000	+8,0

4.



,KS,JIS

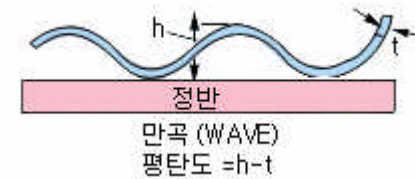
(:mm)

\	(WAVE)	(EDGE)	(CENTER)
1000	12(2)	8(2)	6(2)
1000 1250	15(3)	10(2)	8(2)
1250 1600	15(3)	12(3)	9(2)
1600	20(5)	14(4)	10(2)

1. ()
2.

가

.



5.



(:mm)

\	2000	2000	
600	4	2000	4
600	2	2000	2

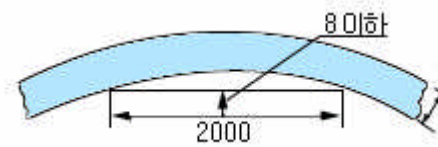
:

KS,JIS

(:mm)

\	2000	2000	
30 60	8	2000	8
60 600	4	2000	4
600	2	2000	2

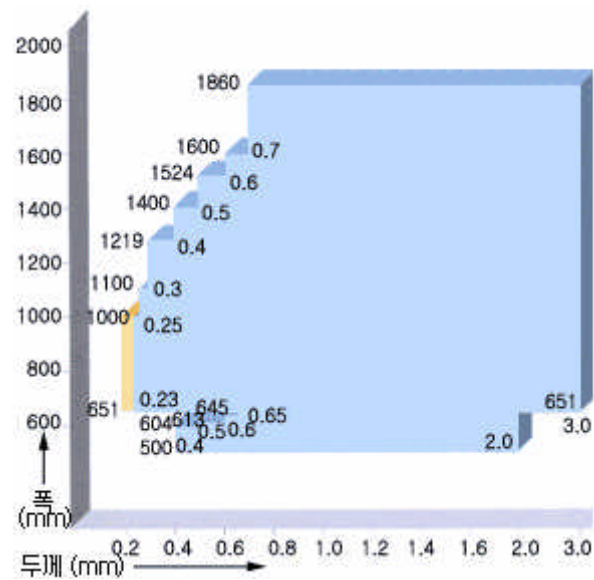
- 1.
- 2.



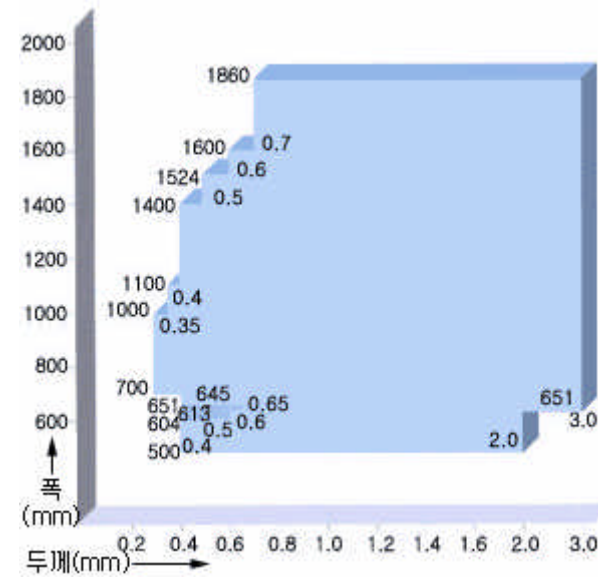
제조가능사이즈

“본 제조가능 사이즈는 변경될 수 있으므로 주문시 반드시 **제조가능 사이즈 조회**로 확인하시거나 담당자와 협의바랍니다.”

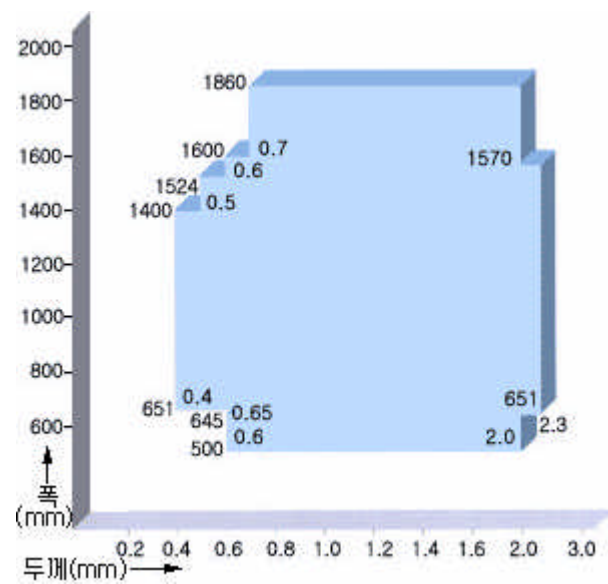
■CQ



■DQ,DDQ

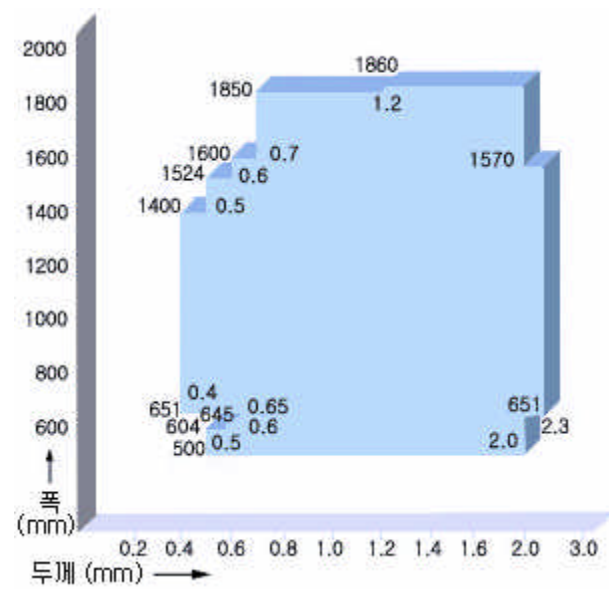


EDDQ



2

(35kg)



표면사상 및 도유

1.

Dull Bright

Dull

Steel Grit

Roll
가Pear-Skin Finish
가Egg-Shell Texture
가

Bright

Roll

가

	D1	D3	D5	D7	D9	EA	EB
Dull Finish Ra(μm)	2.00-3.00	1.50-2.50	1.00-1.80	0.7-1.30	0.40-0.80	0.50-1.20	0.30-0.60
							TV Shadow Mask

	B0	B2	B4	B6	BC
Bright Finish Ra(μm)	0.50-0.70	0.30-0.50	0.15-0.30	0.05-0.15	0.27-0.42

2.

가

Heavy, General, Light ,

	CODE	(mg/ m ²)
Heavy	AH	3,000 - 4,500
GeneralL	AG	1,500 - 3,000
Light	AL	700 - 1,500
DOS -A	BC	200 - 400
DOS -A	BD	50 - 100
DOS -A	BS	25 - 60
DOS -A	BU	10 - 25
	X	-

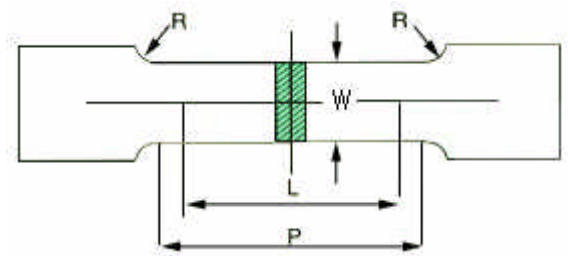
시험방법

1.

, 가 .

2.

ASTM KS, JIS,



3.

가

P : 60mm
L :50mm
W :25mm
R :15mm

a. 가 .

b.

c. : (/)
가 , 가

d.

e. n (가)
가 $\delta = c \varepsilon'$. 가 n .

f. r ()
In wo / w

In to / t
wo, w=
to, t=
() r r , r
가

4.DBTT Test

- flow : (Blanking, Punching) → Drop weight test
(가)

5.DBTT 가 (No-trimming)

	Blank Dia(mm)	96	Drop Weight Test	Load(kgf)	4.44
	Punch Dia(mm)	50		Drop Heigh(m)	0.9
	Punch type	Flat Cup		Weight type	
	Drawing Ratio	1.92			

* Drawing Ratio (1.7~2.16) : 85mm(1.7)~108mm(2.16))

6.

KS B 0801 No.3

가 180°

7.

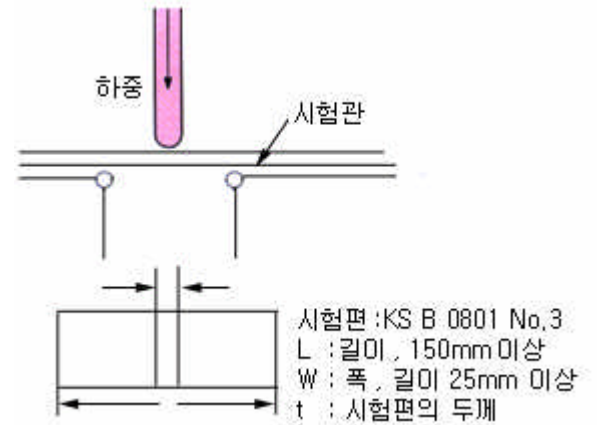
, 가

Steel Ball
가

2 가

B-Scale F-Scale
1/16 (1.588mm) Steel Ball
100kg F-Scale 60kg

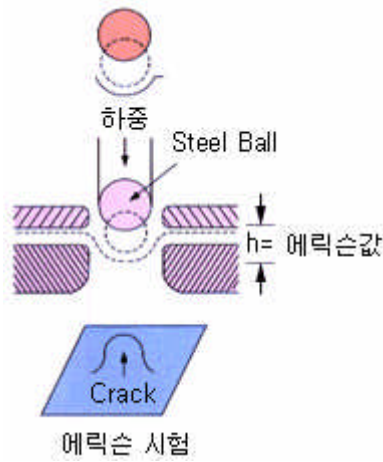
Steel Ball B-Scale
0.762mm(0.030in) 가
0.762mm F-Scale



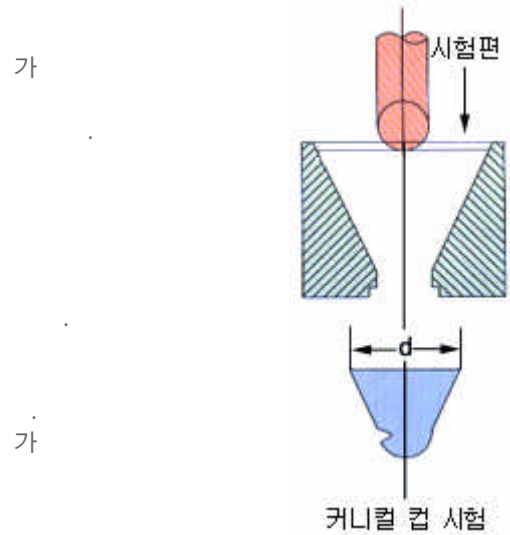
8.가

가
가
가

가



가



가

h