MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGEN0004	
		PAGE	1 OF 2	REV. No. 0
MATERIAL SPEC.	21CrMoV511	Project Code	P1705A004	
NAME OF MATERIAL	FORGED STEEL BAR			
APPLICABLE CODE FOR MATERIAL	DIN 1.8070 (LASTEST EDITION)			
APPLICABLE CODE FOR FABRICATION				
MECHANICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ IMPACT TEST : ☐ CHARPY ☐ DROP TEMP. : _____ ℃ ENERGY VALUE : AVG. _____ J MIN. _____ J ☐ HARDNESS TEST : MIN. _____ HB ☐ OTHERS			
CHEMICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ HEAT ANALYSIS ☐ PRODUCT ANALYSIS ☐ CARBON CONTENT : MAX. _____ % ■ CARBON EQUIVALENT: MAX. _____ % (FORMULA = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni) / 15) ☐ OTHERS			
HEAT TREATMENT FOR PRODUCT	■ AS PER CODE / SPECIFICATION ☐ AS ROLLED ☐ NORMALIZING ☐ SOLUTION ANNEALED ■ TEMPERING ■ QUENCHING ☐ ANNEALING			
HEAT TREATMENT FOR TEST PIECE	☐ STRESS RELIEF : HOLDING TEMP. ± ℃ (COLD FORMING) HOLDING TIME Hr. MIN. ☐ PWHT : HOLDING TEMP. ± ℃ HOLDING TIME Hr. MIN. ☐ OTHERS			
MARKING REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ OTHERS			
NDE REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ RT ■ UT ☐ PT ■ MT ☐ ET ☐ VT ☐ OTHERS			
RECORD TO BE SUBMITTED	■ ENGLISH ☐ KOREAN ■ ORIGINAL - 1 SET USED UNIT ☐ ENGLISH ■ SI ☐ MKS MATERIAL CERTIFICATION : ☐ EN 10204 3.1 ■ EN 10204 3.2			
REMARK				

REV. No.	DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
2				
1				
0	**1st Issue**	**H. J PARK**	**-**	**M.S KIM**

MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGEN0004		
		PAGE	2 OF 2	REV. No.	0
MATERIAL SPEC.	21CrMoV511		W/O NO	P1705A004	

< *Notes* >

1 Performance of Examination

1.1 UT

1.1.1 UT shall be performed according to ASME Section V SA388 (2015 Ed.)

1.1.2 Quality Level : 45 ˚ Angle-Beam

1.1.3 Criteria : ASME Section V SA388 Item 8 (2015 Ed.)

1.2 MT

1.2.1

1.2.2 MT Shall be performed according to ASME Section V ART 7 (2015 Ed.)
Criteria : ASME Section VIII Div.1 APP 6 (2015 Ed.)

2 POSCO 입회 검사

MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGJIS0002		
		PAGE	1 OF 2	REV. No.	0
MATERIAL SPEC.	SF490A		Project Code	P1705A004	
NAME OF MATERIAL	CARBON STEEL FORGINGS FOR GENERAL USE				
APPLICABLE CODE FOR MATERIAL	JIS G3201 (LASTEST EDITION)				
APPLICABLE CODE FOR FABRICATION					
MECHANICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ IMPACT TEST : ☐ CHARPY ☐ DROP TEMP. : _____ ℃ ENERGY VALUE : AVG. _____ J MIN. _____ J ☐ HARDNESS TEST : MAX. _____ HB ☐ OTHERS				
CHEMICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ HEAT ANALYSIS ☐ PRODUCT ANALYSIS ☐ CARBON CONTENT : MAX. _____ % ■ CARBON EQUIVALENT: MAX. _____ % (FORMULA = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni) / 15) ☐ OTHERS				
HEAT TREATMENT FOR PRODUCT	■ AS PER CODE / SPECIFICATION ☐ AS ROLLED ■ NORMALIZING ☐ SOLUTION ANNEALED ☐ TEMPERING ☐ QUENCHING ☐ ANNEALING				
HEAT TREATMENT FOR TEST PIECE	☐ STRESS RELIEF : HOLDING TEMP. ± ℃ (COLD FORMING) HOLDING TIME Hr. MIN. ■ PWHT : HOLDING TEMP. **565** ± **15** ℃ HOLDING TIME **3** Hr. **20** MIN. x **3 TIMES** ☐ OTHERS				
MARKING REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ OTHERS				
NDE REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ RT ■ UT ☐ PT ■ MT ☐ ET ☐ VT ☐ OTHERS				
RECORD TO BE SUBMITTED	■ ENGLISH ☐ KOREAN ■ ORIGINAL **- 1 SET** USED UNIT ☐ ENGLISH ■ SI ☐ MKS MATERIAL CERTIFICATION : ☐ EN 10204 3.1 ■ EN 10204 3.2				
REMARK					

REV. No.	DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
2				
1				
0	**1st Issue**	**H. J PARK**	**-**	**M.S KIM**

MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGJIS0002		
		PAGE	2 OF 2	REV. No.	0
MATERIAL SPEC.	SF490A		W/O NO	P1705A004	

< *Notes* >

1 Performance of Examination

1.1 UT

1.1.1 UT shall be performed according to ASME Section V SA388 (2015 Ed.)

1.1.2 Quality Level : Straight-Beam

1.1.3 Criteria : ASME Section V SA388 Item 8 (2015 Ed.)

1.2 MT

1.2.1 MT Shall be performed according to ASME Section V ART 7 (2015 Ed.)

1.2.2 Criteria : ASME Section VIII Div.1 APP 6 (2015 Ed.)

2 Heat Treatment for Test Piece(PWHT) : Heating Max.80 ℃/hr, Cooling Max.80 ℃/hr at 200 ℃ on air.

3 Machined Surfaces: TECTYL 506

4 POSCO 입회 검사

MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGJIS0003		
		PAGE	1 OF 2	REV. No.	0
MATERIAL SPEC.	SFCM590D		Project Code		P1705A004
NAME OF MATERIAL	CHROMIUM MOLYBDENUM STEEL FORGINGS FOR GENERAL USE				
APPLICABLE CODE FOR MATERIAL	JIS G3221 (LASTEST EDITION)				
APPLICABLE CODE FOR FABRICATION					
MECHANICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ IMPACT TEST : ☐ CHARPY ☐ DROP TEMP. : _____ ℃ ENERGY VALUE : AVG. _____ J MIN. _____ J ■ HARDNESS TEST : MIN. 200 HB ☐ OTHERS				
CHEMICAL REQUIREMENTS (BASE METAL)	■ AS PER CODE / SPECIFICATION ☐ HEAT ANALYSIS ☐ PRODUCT ANALYSIS ☐ CARBON CONTENT : MAX. _____ % ■ CARBON EQUIVALENT: MAX. _____ % (FORMULA = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni) / 15) ☐ OTHERS				
HEAT TREATMENT FOR PRODUCT	■ AS PER CODE / SPECIFICATION ☐ AS ROLLED ■ NORMALIZING ☐ SOLUTION ANNEALED ☐ TEMPERING ☐ QUENCHING ☐ ANNEALING				
HEAT TREATMENT FOR TEST PIECE	☐ STRESS RELIEF : HOLDING TEMP. ± ℃ (COLD FORMING) HOLDING TIME Hr. MIN. ☐ PWHT : HOLDING TEMP. ± ℃ HOLDING TIME Hr. MIN. ☐ OTHERS				
MARKING REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ OTHERS				
NDE REQUIREMENTS	■ AS PER CODE / SPECIFICATION ☐ RT ■ UT ☐ PT ■ MT ☐ ET ☐ VT ☐ OTHERS				
RECORD TO BE SUBMITTED	■ ENGLISH ☐ KOREAN ■ ORIGINAL - 1 SET USED UNIT ☐ ENGLISH ■ SI ☐ MKS MATERIAL CERTIFICATION : ☐ EN 10204 3.1 ■ EN 10204 3.2				
REMARK					

REV. No.	DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
2				
1				
0	**1st Issue**	**H. J PARK**	**-**	**M.S KIM**

MATERIAL PURCHASE SPECIFICATION 자 재 구 매 사 양 서		MPS No.	FGJIS0003		
		PAGE	2 OF 2	REV. No.	0
MATERIAL SPEC.	SFCM590D		W/O NO	P1705A004	

< Notes >

1 Performance of Examination

1.1 UT

1.1.1 UT shall be performed according to ASME Section V SA388 (2015 Ed.)

1.1.2 Quality Level : Straight-Beam

1.1.3 Criteria : ASME Section V SA388 Item 8 (2015 Ed.)

1.2 MT

1.2.1

1.2.2 MT Shall be performed according to ASME Section V ART 7 (2015 Ed.)
Criteria : ASME Section VIII Div.1 APP 6 (2015 Ed.)

2 Disc eye surface hardness after machining HB 200 ~ 250.

3 POSCO 입회 검사