

Table 8—密封面, 閥桿 及 後襯座 or 堆焊材質 和 硬度 之定義 (引用 API 600-2015 年版規範內容)

Trim 編號	Trim 名稱	密封面 (閥門 & 閥座)		密封面 典型規格 種類 (閥門 & 閥座)			閥桿/襯套		閥桿硬度 (HB)	後襯座 硬度 (HB)
		最小硬度 (HB) ^a	材質種類 ^b	鑄造	鍛造	焊接 ^m	材質種類 ^b	典型規格 種類		
1	F6	Trim 1 已廢止								
2	304	Trim 2 已廢止								
3	F310	Note ^d	25Cr-20Ni	NA	ASTM A182 (F310)	AWS A5.9 ER310	25Cr-20Ni	ASTM A276-T310	Note ^d	Note ^d
4	Hard F6	750 ^e	Hard 13Cr	NA	Note ^f	NA	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
5	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ER CoCrA	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
5A	Hardfaced	350 ^e	Ni-Cr	NA	NA	Note ^h	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
6	F6 and Cu-Ni	250 ⁱ	13Cr	ASTM A 217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
		175 ⁱ	Cu-Ni	NA	Note ^k	NA				
7	F6 and Hard F6	250 ⁱ	13Cr	ASTM A 217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
		750 ⁱ	Hard 13Cr	NA	Note ^f	NA				
8	F6 and Hardfaced	250 ⁱ	13Cr	ASTM A 217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410AWS	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
		350 ⁱ	Co-Cr A g	NA	NA	A5.13 ECoCr-A or AWS A5.21 ER CoCrA				
8A	F6 and Hardfaced	250 ⁱ	13Cr	ASTM A 217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276 T410 or T420	200 min 275 max	250 min.
		350 ⁱ	Ni-Cr	NA	NA	Note ^h				
9	Monel	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d	Note ^d
10	316	Note ^d	18Cr-8Ni	ASTM A351 (CF8M)	ASTM A183 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ^d
11	Monel and Hardfaced	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d	Note ^d
		350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
12	316 and Hardfaced	Note ^d	18Cr-8Ni-Mo	ASTM A351 (CF8M)	ASTM A182 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ^d
		350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				

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Trim 編號	Trim 名稱	密封面 (閥門 & 閥座)		密封面 典型規格 種類 (閥門 & 閥座)			閥桿/襯套		閥桿硬度 (HB)	後襯座 硬度 (HB)
		最小硬度 (HB) ^a	材質種類 ^b	鑄造	鍛造	焊接 ^m	材質種類 ^b	典型規格 種類		
13	Alloy 20	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
14	Alloy 20 and Hardfaced	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
		350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
15	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ER CoCrA	18Cr-8Ni	ASTM A276-T304	Note ^d	Note ⁿ
16	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ER CoCrA	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ⁿ
17	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ER CoCrA	18Cr-10Ni-Cb	ASTM A276-T347	Note ^d	Note ⁿ
18	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ER CoCrA	19Cr-29Ni	ASTM B473	Note ^d	Note ⁿ
19	Nickel ¹	Note ^d	Ni Alloy	MFG Standard ¹	MFG Standard ¹	MFG Standard	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ
19A	Alloy 625	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
19B	Alloy C276	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ
19C	Alloy 825	Note ^d	Alloy 825	ASTM A494(CU5MCuC)	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
20	Nickel ¹ and Hardfaced	Note ^d	Ni Alloy	MFG Standard ¹	MFG Standard ¹	AWS 5.13 ECoCr-A or	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS 5.21 ECoCr-A				

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20A	Alloy 625 and	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
	Hardfaced	350 ⁱ	Co-Cr A ^b	NA	NA	AWS 5.13 ECoCr-A or AWS 5.21 ECoCr-A				
20B	Alloy C276 and	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ
	Hardfaced	350 ⁱ	Co-Cr A ^b	NA	NA	AWS 5.13 ECoCr-A or AWS 5.21 ECoCr-A				
20C	Alloy 825 and	Note ^d	Alloy 825	ASTM A494 (CU5MCuC)	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
	Hardfaced	350 ⁱ	Co-Cr A ^b	NA	NA	AWS 5.13 ECoCr-A or AWS 5.21 ECoCr-A				
21	Hardfaced ¹	350 ^e	Co-Cr A ^b	NA	NA	AWS 5.13 ECoCr-A or AWS 5.21 ECoCr-A	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ

注：Cr=鉻; Ni=鎳; Co=鈷; Cu=銅; NA=不適用

1. 閥內件材料，包括閥桿和基體材料用於 HF 內件物品，應具有耐腐蝕性和溫度限制至少等於閥體的耐腐蝕性和壓力溫度等級

- a HB (formerly BHN) is the symbol for the Brinell hardness per ASTM E10. (根據 ASTM E10 HB(以前是 BHN)代表勃式硬度)
- b Free machining grades of 13Cr are prohibited. (禁止使用免加工之 13Cr 等級材料。)
- c Body and gate seat surfaces should be 250 HB minimum with a 50 HB minimum differential between the body and gate seat surfaces. (閥體和閥門密封面硬度最小應達到 250 HB, 且閥體和閥門密封面硬度最小應相差 50 HB.)
- d Manufacturer's standard hardness. (製造商的標準硬度值)
- e Differential hardness between the body and gate seat surfaces is not required. (不要求閥體和閥門密封面硬度需有差異.)
- f Case hardness by nitriding to a thickness of 0.13 mm (0.005 in.) minimum. (表面硬度的氮化處理最小厚度為 0.13mm (0.005 in).)
- g AWS A5.13 ECoCr-A or AWS A5.21 ERCr-A: This classification includes such trademark materials as Stellite 6™ *, Stody 6™ * and Wallex 6™ *. For Plasma Transfer Arc Welding (PTAW) process powder with the metallurgy equivalent to UNS R30006 can also be used. CoCr-E (Stellite 21™ * or equal) may be used only with purchaser approval and typical CoCr-E alloys include AWS A5.13 ECoCr-E or AWS A5.21 ERCr-E. (AWS A5.13 ECoCr-A 或 AWS A5.21 ERCr-A：這種分類包括商標等材料 Stellite6™*，Stody6™*和 Wallex6™*。等離子轉移電弧焊 (PTAW) 工藝粉未用相當於 UNS R30006 冶金也可以使用。鈷鉻-E (Stellite21™*或等於) 只可在買方認可和一般鈷鉻-E 合金用於包括 AWS A5.13 ECoCr-E 或 AWS A5.21 ERCr-E。)
- h Manufacturer's standard hardfacing with a maximum iron content of 25 %. (製造者的標準硬面需含的最大鐵含量為 25%.)
- i Hardness differential between the body and gate seat surfaces shall be the manufacturer's standard. (閥體和閥門密封面的硬度差距應以製造者的標準為準.)
- j Not used. (不需要)
- k Manufacturer's standard with 30 Ni minimum. (製造者的標準最小值為 30 Ni.)
- l aNot used. (不需要)
- m Typical backseat weld deposit material. (典型的後襯座堆焊材質)
- n Per manufacturer's standard if not hardfaced, 250 HB minimum if hardfaced. (如果不需硬面，則依照製造者的標準；假使要硬面，最小值為 250 HB.)
- * This term is used as an example only, and does not constitute an endorsement of this product by API. (這個條約只是一個範例而已，因此 API 並不會為此產品來背書.)