Wire/flux combination, unalloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
UNION S EM12K + UV C 418 TT-M AWS A5.17: F7A8-EM12K, F7P8-EM12K EN ISO 14171-A: S 42 6 FB S2Si	Wire C: 0.11 Si: 0.23 Mn: 1.0 P: 0.012 S: 0.004 Weld metal: C: 0.08 Si: 0.30 Mn: 1.09 P: 0.017 S: 0.005	Heat treatment: As welded UTS: 520 MPa (500-640) YS: 445 MPa (≥420) El: 30% (≥22) CVN Impact: -40°C: 170J (≥47) -60°C: 120J (≥47) Heat treatment: 620°C / 1h UTS: 500 MPa (485-640) YS: 425 MPa (≥400) El: 33% (≥22) CVN Impact: -40°C: 190J (≥47) -60°C: 150J (≥47)	1.6 2.0 2.4 3.2 4.0	-	Union S EM12K - UV C 418 TT-M is a wire flux combination universally applicable in shipbuilding, steel construction and in the fabrication of boilers and containers. A nice bead appearance and good wetting properties, together with good slag detachability and low hydrogen content in the weld metal (≤ 5 ml/100 g) characterize this wire/flux combination. It is particularly suitable for multi-pass welding of thick plates. Very good slag detachability also for narrow gap welding.
UNION S EH10K / UV C 418 TT-M AWS A5.17: F7A6-EH10K / F7P6-EH10K EN ISO14171-A: S 46 5 FB S3	Wire C: 0.08 Si: 0.05 Mn: 1.5 P: 0.01 S: 0.01 Weld metal C: 0.08 Si: 0.2 Mn: 1.6 P: 0.02 S: 0.01	Heat treatment: As welded UTS: 560 MPa (500-640) YS: 460 MPa (≥400) El: 30% (≥22) CVN Impact: -40°C: 150J (≥27) -60°C: 80J (≥27) Heat treatment: 620°C / 1h UTS: 520 MPa (500-640) YS: 420 MPa (≥400) El: 32% (≥22) CVN Impact: -40°C: 170J (≥27) -60°C: 100J (≥27)	1.6 2.0 2.4 3.2 4.0	-	Union S EH10K - UV C 418 TT-M is a wire flux combination universally applicable in shipbuilding, steel construction and in the fabrication of boilers and containers. A good seam appearance and good wetting properties, together with good slag detachability and low hydrogen content in the weld metal (≤ 5 ml/100 g) characterize this wire/flux combination. It is particularly suitable for multi pass welding of thick plates. Very good slag detachability also for narrow gap welding.
UNION S EH14 + UV C 418 TT AWS A5.17: F7A4-EH14, F7P4-EH14 EN ISO14171-A: S 46 6 FB S4	Wire C: 0.10 Si: 0.05 Mn: 1.80 P: 0.019 S: 0.013 Cu: 0.05 Weld metal C: 0.08 Si: 0.18 Mn: 1.90 P: 0.018 S: 0.011 Cu: 0.05	Heat treatment: As welded UTS: 550 MPa (500-640) YS: 470 MPa (≥460) El: 30% (≥22) CVN Impact: -40°C: 150J (≥47) -60°C: 120J (≥47) Heat treatment: 620°C / 1h UTS: 500 MPa (480-660) YS: 405 MPa (≥400) El: 32% (≥22) CVN Impact: -40°C: 180J (≥47) -60°C: 140J (≥47)	1.6 2.0 2.4 3.2 4.0	-	Union S EH14 - UV C 418 TT is a wire flux combination universally applicable in shipbuilding, steel construction and in the fabrication of boilers and containers. A good seam appearance and good wetting properties, together with good slag detachability and low hydrogen content in the weld metal (≤ 5 ml/100 g) characterize this wire/flux combination. It is particularly suitable for multi pass welding of thick plates. Very good slag detachability also for narrow gap welding.

Wire/flux combination, unalloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
UNION S EM12K + UV C 401 AWS A5.17: F7A5-EM12K, F7P5-EM12K EN ISO 14171-A: S 42 4 AB S2Si	Wire C: 0.09 Si: 0.25 Mn: 1.1 P: 0.02 S: 0.004 Weld metal C: 0.06 Si: 0.51 Mn: 1.47 P: 0.02 S: 0.005	Heat treatment: As welded UTS: 570 MPa YS: 470 MPa El: 33% CVN Impact: -40°C: 90J	1.6 2.0 2.4 3.2 4.0	ABS (4YM)	Union S EM12K - UV C 401 is a wire flux combination for joining and surfacing applications with general-purpose structural steels, boiler and pipe steels. The flux is characterized by low Silicon and moderate Manganese pick-up. The welding characteristics are good producing a smooth weld bead with excellent slag detachability.
UNION S EM12K + UV C 305 AWS A5.17: F7AZ-EM12K EN ISO 14171-A: S 42 Z AR S2Si	Wire C: 0.09 Si: 0.25 Mn: 1.1 P: 0.02 S: 0.004 Weld metal C: 0.05 Si: 0.6 Mn: 1.2 P: 0.03 S: 0.01	Heat treatment: As welded UTS: 530 MPa YS: 450 MPa El: 31% CVN Impact: +20°C: 70J 0°C: 40J	1.6 2.0 2.4 3.2	-	Union S EM12K - UV C 305 is a wire flux combination for joining applications with general purpose steels. It is particullary well suited for single wire or twin-arc fillet welding with small wire diameter (e.g. with 2.0 mm) with high welding speed. Wall thickness <10 mm. The flux is characterized by low silicon and moderate manganese pick up. The welding characteristics are good producing a smooth weld bead with excellent slag detachability.

Wire/flux combination, low alloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
UNION S 2 Mo / UV 421 TT AWS A 5.23: F8A6-EA2-A2 EN ISO 14171-A: S 46 4 FB S2Mo	Wire C: 0.10 Si: 0.15 Mn: 1.0 Mo: 0.5 Weld metal: C: 0.07 Si: 0.25 Mn: 1.1 Mo: 0.5 P: ≤0.012 As: ≤0.01 Sb: ≤0.005 Sn: ≤0.005	Heat treatment: 620°C / 1h UTS: >550 MPa YS: >470 MPa El: >24% CVN Impact: +20°C: 140J -20°C: 100J -40°C: 47J	2.0 2.5 3.0 4.0	TÜV, DB, CE, LR	Wire/flux combination suited for fine grained constructional steels of increased strength, specially used in boiler, vessel and pipeline construction. The metallurgical behaviour of the flux UV 421 TT is neutral. The wire/flux combination produces very good low temperature impact properties down to -40°C. Excellent slag detachability, smooth beads and good wetting are further important features. The flux can be used for tandem and multi wire welding on DC and AC. For information regarding UV 421 TT see our detailed data sheet.