

## Suggested Filler Metals For SMAW Joints

| Base Material Number | Nominal Analysis of Base Materials | BASE MATERIAL NUMBER |           |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|----------------------|------------------------------------|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|----------|--------|
|                      |                                    | 21                   | 20        | 19        | 18        | 17        | 16        | 15        | 14        | 13        | 12        | 11        | 10        | 9         | 8         | 7         | 6        | 5        | 4         | 3         | 2        | 1      |
| 1                    | Carbon Steel P-1                   | ENiCrFe-2            | ENiCu-7   | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309      | E309      | E309      | E7018     | E7018    | E7018    | E7018     | E7018     | E7018    | E6010* |
|                      |                                    | ENiCrFe-3            | ENiCrFe-2 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           |           |          | E7018  |
| 2                    | Carbon Molybdenum P-3              | ENiCrFe-2            | ENiCu-7   | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309      | E309      | E309      | E7018-A1  | E7018-A1 | E7018-A1 | E7018-A1  | E7018-A1  | E7010*   |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-2 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           |           |          | E7018  |
| 3                    | 1 Cr-1/2 Mo P-4                    | ENiCrFe-2            | ENiCu-7   | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    |           |           |           | E8018B2L  | E8018B2L | E8018B2L | E8018B2L  | E8015B2L* |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-2 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           |           | E8018B2L |        |
| 4                    | 1 1/4 Cr-1/2 Mo P-4                | ENiCrFe-2            | ENiCu-7   | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    |           |           |           | E8018B2L  | E8018B2L | E8018B2L | E8015B2L* |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-2 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           | E8018B2L  |          |        |
| 5                    | 2 1/4 Cr-1/2 Mo P-5                | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    |           |           |           | E9018B3L  | E9018B3L | E9018B3L |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           | E9018B3L  |          |        |
| 6                    | 5 Cr-1/2 Mo P-5                    | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    |           |           |           | E502-16   | E502-15* |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           | E502-16  |          |           |           |          |        |
| 7                    | 9 Cr-1 Mo P-5                      | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E505-15   | E505-15   |           | E505-15   |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |           |           |           |          |          |           |           |          |        |
| 8                    | 405 Stainless Steel P-7            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309      | E309      | E309      |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |          |          |           |           |          |        |
| 9                    | 410S Stainless Steel P-7           | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309      | E309      |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |          |          |           |           |          |        |
| 10                   | 410 Stainless Steel P-6            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309**    | E309      |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 | ENiCrFe-2 |          |          |           |           |          |        |
| 11                   | 304 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E308      | E309      | E308      | E308      | E308      | E308      | E308      | E308      |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 12                   | 304L Stainless Steel P-8           | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E308L     | E308L     | E308L     | E308L     | E347      | E347      | E308L     |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 13                   | 321 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E347      | E347      | E347      | E347      | E347      | E347      |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 14                   | 347 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E347      | E347      | E347      | E347      | E347      |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 15                   | 316 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E316      | E316      | E316      | E316L     |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 16                   | 316L Stainless Steel P-8           | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E316      | E316L     | E316      |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 17                   | 309 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E309      | E309      |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 18                   | 310 Stainless Steel P-8            | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 | E310      |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 19                   | Alloy 800(Incoloy 800) P-45        | ENiCrFe-2            | ENiCrFe-2 | ENiCrFe-2 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 20                   | Monel 400 P-42                     | ENiCrFe-2            | ENiCrFe-2 |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            | ENiCrFe-3 |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
| 21                   | Inconel 625 P-                     | ENiCrFe-2            |           |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |
|                      |                                    | ENiCrFe-3            |           |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |           |           |          |        |

**Common Names of Electrodes**

- ENiCrFe-2 - Inco A
- ENiCrFe-3 - Inconel 182
- ENiC-7 - Monel 190

\* Filler metal for root pass of joint

\*\* When the operating temperature < 650 F and not cyclic use E-309  
 When the operating temperature > 650 F or cyclic use ENiCrFe-2