


## VdTÜV-Kennblatt for welding consumables

	1 Manufacturer/Supplier VDM Metals GmbH Plettenberger Straße 2 DEU 58791 Werdohl			2 No. of VdTÜV-Kennblatt: 07528.03 08.2014																
	3 Welding consumable*: Schweißstab																			
4 Trade name*: VDM® FM 33																				
7 Type*: EN ISO 14343-A - S Z 33 32 1 Cu N L (1.4591)																				
11 Diameter range: 1,6 bis 3,0 mm																				
12 Auxiliary materials: EN ISO 14175 - I 1, R 1 (Ar + max 5% H2)																				
13 The validity of this Kennblatt will be certified, respectively, in the latest edition of CD-ROM TÜV-eignungsgeprüfte Schweißzusätze																				
15 Materials and postweld heat treatment																				
X 1 CrNiMoCuN 33 32 (1.4591) VdTÜV-Werkstoffblatt 516 sowie Mischverbindungen zwischen X 1 CrNiMoCuN 33 32 1 (1.4591) und Werkstoffen wie X 2 CrNiMo 18 10 (1.4583)																				
Wärmebehandlung: U																				
16 Material groups acc. to CR ISO 15608																				
21 Root weldability: verified																				
23 Wall thickness: max. 20 mm																				
24 Type of current and polarity: G-																				
25 Welding position according to DIN ISO 6947: PA, PB, PC, PF																				
26 Highest operating temperature in the short-term range as for parent metal, but not higher than: 450°C																				
27 Highest operating temperature in the long-term range max.: --- °C																				
28 Lowest operating temperature/as for parent metal, but not lower than: -196°C																				
29 Design stress value/as for parent metal: wie Grundwerkstoff																				
30 For use in the long-term range: ---																				
31 Resistance to intergranular corrosion proven in accordance with: ---																				
32 Remarks: Prägung der Schweißstäbe: 1.4591 B Verformung des Schweißgutes max. 10%. Zu Wanddicke: Bei größeren (bis max. 40 mm) Wanddicken sind die Füllagen mit artfremden Schweißgut z. B. Nicrofer S 3028 zu schweißen und mindestens 2-lagig mit VDM® FM 33 abzudecken. Die speziellen Verarbeitungsrichtlinien des Schweißzusatzherstellers und des VdTÜV-Wbl. 516 sind zu beachten. Anforderungen an das Schweißgut, die bei der Eignungsprüfung abweichend vom Grundwerkstoff zu Grunde gelegt wurden: A5 >= 25%, Av >= 60 Joule (RT), Av >= 32 Joule (-196°C).																				
33 The approval test was done on the basis of VdTÜV-Merkblatt 1153. Where nothing different is said under the heading -Remarks-, this welding consumable is suitable provided Annex I Point 4 of the Pressure Equipment Directive 97/23/EC is observed.																				
34 Explanations <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">A tempered</td> <td style="width: 25%;">S stress-relieved</td> <td style="width: 25%;">W soft annealed</td> <td style="width: 25%;">G+ direct current plus pole</td> </tr> <tr> <td>L solution annealed and quenched</td> <td>St stabilized</td> <td></td> <td>G- direct current minus pole</td> </tr> <tr> <td>N normalized</td> <td>U non-annealed</td> <td></td> <td>W alternating current</td> </tr> <tr> <td></td> <td>V hardened and tempered</td> <td></td> <td></td> </tr> </table>					A tempered	S stress-relieved	W soft annealed	G+ direct current plus pole	L solution annealed and quenched	St stabilized		G- direct current minus pole	N normalized	U non-annealed		W alternating current		V hardened and tempered		
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35 Compiled in accordance with the data of: TÜV NORD - Region Essen																				
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\*) Statements of the manufacturer