VM-105 DP S

a VAM Drilling Sour Service solution

"Sour Service" refers to a well environment containing Hydrogen Sulfide (H_2S), which is hazardous to human health and could impact significantly on steel drill pipe performance.
VAM Drilling has developed proprietary grades conforming to industry standards and maximizing safety and performance for sour drilling. **VM-105 DP S** is one of those proprietary grades.

▷ Product added value

A specific steel chemistry

Grade	%	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
VM-105 DP S	Min						0.80	0.25		
	Max	0.38	0.40	1.20	0.020	0.010	1.50	1.00	0.27	0.37

Controlled heat treatment

To achieve good performance, pipes are heated to a suitable austenitizing temperature, followed by an adjusted quenching. Pipes are then properly tempered to provide homogeneous properties and a specific fine grain microstructure ensuring an excellent resistance to Sulfide Stress Cracking (SSC).

Technical Name	VM-105 DP S	
Sour Domain	Severe Sour	
Pipe Body		
Yield Strength (Min - Max)	724 - 827 MPa	105 - 120 ksi
Tensile Strength (Min - Max)	794 - 966 MPa	115 - 140 ksi
Elongation (Min)	17%	17%
Controlled Hardness (Average Max)	28 HRC	28 HRC
Controlled Hardness (Single Max)	29 HRC	29 HRC
Charpy Impact Value (Single Min at room temperature, sub size 7.5 x 10 mm²)	80 J	59 ft-lbs
NACE Tests	Tested @70% SMYS	Tested @70% SMYS
Tests Frequency	1/heat	1/heat
Tool joint		
Yield Strength (Min - Max)	724 - 828 MPa	105 - 120 ksi
Tensile Strength (Min - Max)	794 MPa	115 ksi
Elongation (Min)	15%	15%
Controlled Hardness (Average Max)	30 HRC	30 HRC
Controlled Hardness (Single Max)	32 HRC	32 HRC
Charpy Impact Value (Single Min at room temperature, standard size 10 x 10 mm²)	54 J	40 ft-lbs
NACE Tests	Tested @50% SMYS	Tested @50% SMYS
Tests Frequency	1/heat	1/heat

▷ VM-105 DP S specification

VM-105 DP S characteristics are more restricted than API grades and provide high safety margins thanks to a stronger H_2S resistance than G-105.

It suits intermediate and severe sour environments.

NACE tests A are done on both tube and tool-joint.