

ADVANCED SUPPORT FOR WELL OPTIMIZATION



WHATEVER YOUR CHALLENGE, WE HAVE THE SOLUTION

Across all applications, from conventional and unconventional fields, offshore and onshore, to special applications such as geothermal, we support you with competitive and innovative solutions and grades, and help you select the products and services you need.

OUR EXPERTISE

MATERIAL SELECTION

- Extensive testing data base
- Normative material support
- Benchmark testing facilities
- Failure analysis
- Application modeling

WELL DESIGN

- Mechanical and thermal analysis
- Connection selection
- Torque & drag support
- Software-friendly Vallourec product data base

PRODUCT DEVELOPMENT

- Fit-for-purpose product development including design, testing, industrial trial
- Special products such as Risers, Expendables, Vacuum Insulated Tubing, upset pipes

INNOVATION DRIVER

- Participation in key Joint Industry Projects and R&D with main IOCs
- Cooperative-development mindset with extensive expertise

ADVANCED PRODUCT ANALYSIS

- Casing wear performance analysis
- Individual pipe data
- On demand FEA and testing
- Heat transfer & fracture mechanics
- Fatigue assessment (CWD, Riser...)

TESTING AND VALIDATION

- Applicative and testing normative expertise APICT5, ISO 13680, ISO 13679, NACE MR, Norsok, RP96, I3E, TWCEP

YOUR CHALLENGES

COST OPTIMIZATION

- Reduce overall project cost by product optimization

OPERATIONAL SAVINGS

- Running time reduction
- Stock optimization
- Standardization

CRITICAL WELLS

- Fit-for-purpose product development to make your project possible

RELIABILITY

- Normative and regulatory compliance
- Integrity risk reduction
- Field-proven solutions



ENERGY TRANSITION APPLICATIONS

GEOHERMAL

- Connection selection and testing
- Special products such as coating, liners, Vacuum Insulated Tubing

CCUS

- Material selection
- Connection validation for injection wells

HYDROGEN STORAGE

- Material selection
- High-pressure components
- Storage solutions

SERVICES TO EMPOWER YOUR BUSINESS

Vallourec's integrated services offering accompanies you along the entire value chain, combining both traditional services and digital solutions, boosting efficiency and reducing costs.

ENGINEERING SUPPORT

- From engineering-assistance to training, we support you throughout your project, partnering with you to evaluate load cases, safety factors and design scenarios. We accompany you in the selection of the best materials, grades and connections to reduce costs and enhance well integrity.

SUPPLY CHAIN

- Tubular Sourcing & Resale:** reduce your working capital and your environmental footprint. New procurement solutions increase flexibility, shorten lead times and manage surplus, leveraging Smartengo digital solutions.
- Material Management & QA/QC:** benefit from inspection services and obtain full visibility of your supply chain. Thanks to the digital solution Smartengo Inventory, reduce your stock and improve stock rotation by 30% using unique traceability ID barcodes and real-time data.

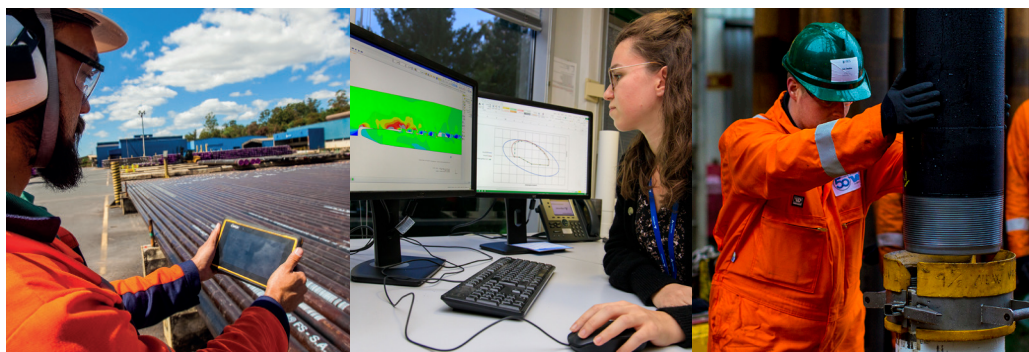
WELL CONSTRUCTION

- Tubular Running QA/QC:** ensure well integrity and running performance. Digital solution Smartengo Running Expert optimizes the sequencing of pipes on drilling rigs and eliminates the risk of errors and costly delays. Running supervision services are guaranteed by VAM® Field Service on-site or remotely, depending on the nature of your operations.
- Rental Equipment:** lower your capital expenditures, reduce maintenance cost of tooling and avoid idle assets with rental services for tubular equipment and accessories.
- Pipe Data Service:** optimize pipe sequence, fine-tune running and cementing operations and build advanced well construction tools leveraging actual pipe data provided by Vallourec.

LIFE OF FIELD

- Leverage Vallourec's advanced digital solutions, actual pipe data and new innovative equipment to go one step closer to the modeling and digital monitoring of your well during its lifetime.

VISIT OUR E-COMMERCE WEBSITE
SMARTENGO.VALLOUREC.COM



A COMPLEX ENVIRONMENT

The Oil and Gas market is vast with multiple applications. While we have chosen to present three of them, Vallourec provides advanced solutions for all applications, and has the capabilities to meet any challenge you may face.

We leverage innovation and digital technology to develop ever more sophisticated, higher performing, and when required, customized solutions for enhanced operations.

HPHT/DEEP WATER



CHALLENGES

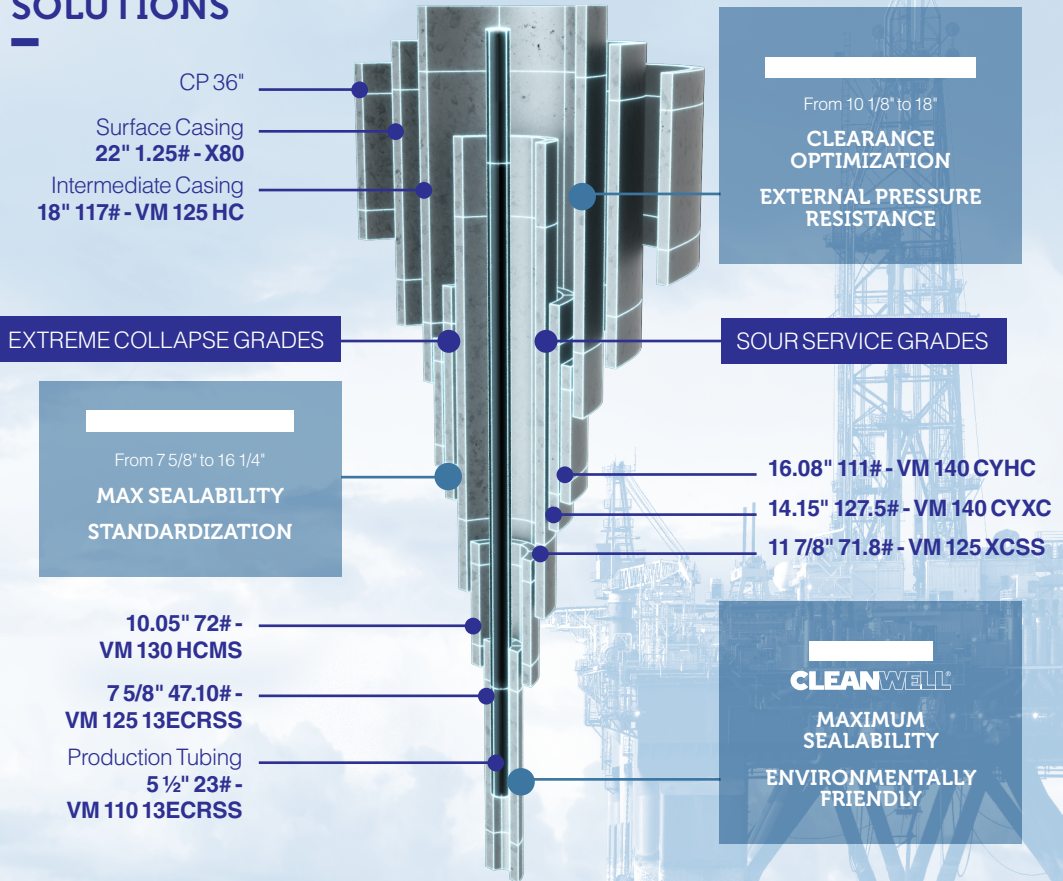
- Normative qualifications
- Well integrity
- Temperature, pressure & clearance

CLEANWELL®

CLEANWELL® is a non-polluting dope-free technology developed by VAM®, applied in the mill to threaded connections replacing both storage and running compounds. The "rig-ready" joints reduce handling and pipe preparation operations as well as associated safety risks, both in the yard and on the rig. While providing outstanding sealability and anti-galling & corrosion resistance, it also reduces back-out, rejects and overall running time, thus improving rig operations.

The result is a lower operating cost and increased efficiency throughout the entire supply chain.

SOLUTIONS



OTHER SOLUTIONS

GRADES	CONNECTIONS
Corrosion Resistant Alloy	VAM EPIC
Enhanced Sour VM 125 ESS	CLEANWELL®
Chromium Grades VM XX 13CR	VAM HP

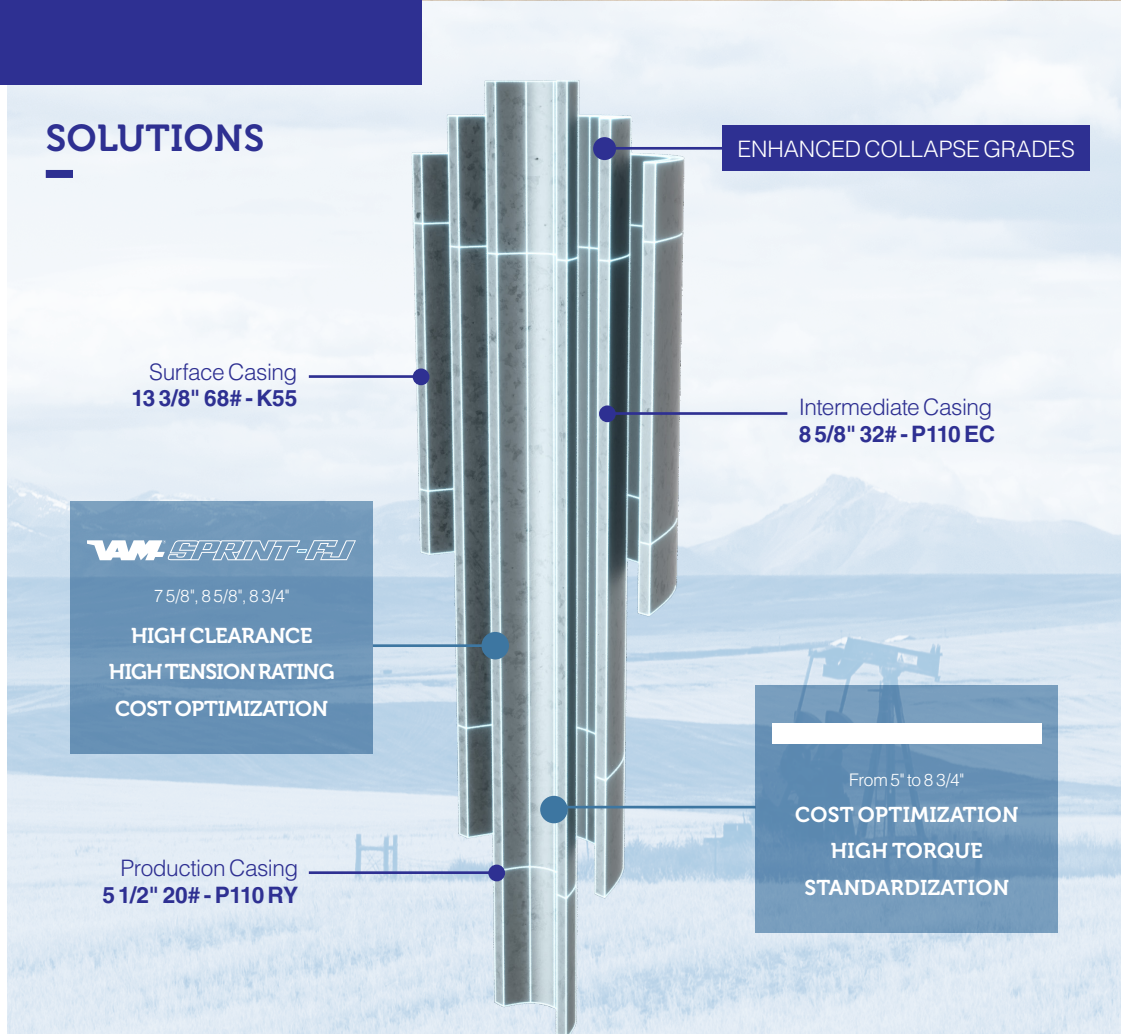
UNCONVENTIONAL



CHALLENGES

- Standardization
- Operational efficiency
- Product ruggedness

SOLUTIONS



OTHER SOLUTIONS

GRADES

API Grade L80, K55
Enhanced Collapse API HCE
Mild Service P 110 MS

CONNECTIONS

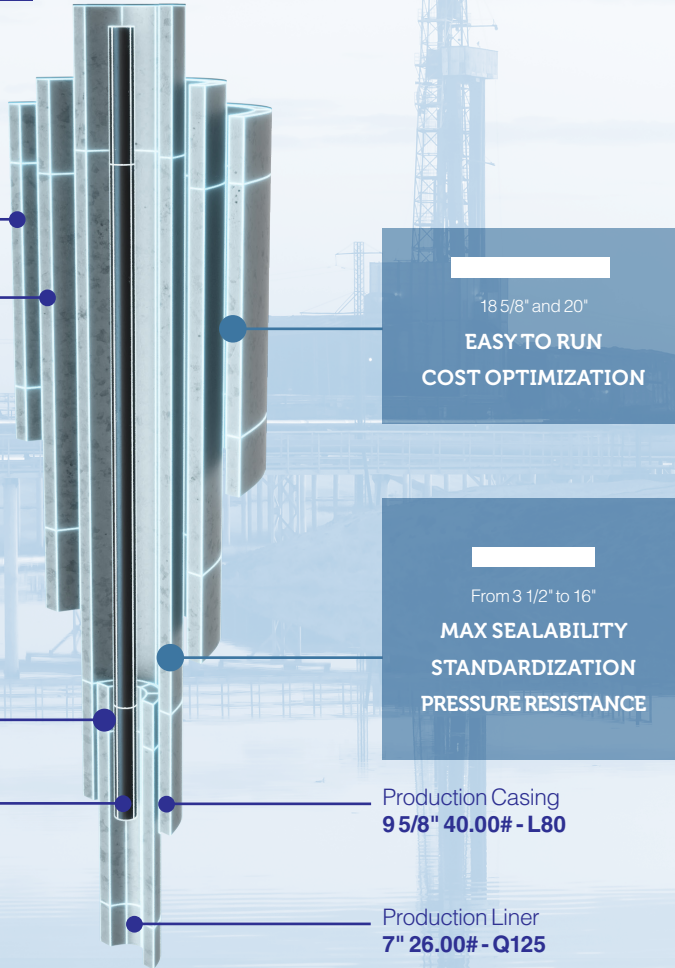
VAM-21HT
VAM-SPRINT-TC
DWC/C

CONVENTIONAL

CHALLENGES

- Optimize total cost of ownership
- Product supply ease
- Large developments

SOLUTIONS



OTHER SOLUTIONS

GRADES	CONNECTIONS
High Strength VM XX CY	VM-TOP
High Collapse VM XX HC	DWC/C
eXtreme Sour VM XX XS	DINO VM

PROPRIETARY GRADES

VM

Vallourec Material

XX

SMYS

YY

Product application domain and performance

YY	DESIGNATION
CR	▶ Chromium
CRSS	▶ Super Chromium
CRM	▶ Modified Chromium
CY	▶ Controlled Yield
HC	▶ High Collapse
XC	▶ eXtreme Collapse
SS	▶ Sour Service
MS	▶ Mild Sour
XS	▶ eXtreme Sour
E	▶ Enhanced

*Pipe grade selection depends on well environment. See material selection table on the right.

LARGE PORTFOLIO TO MEET ALL YOUR NEEDS

- Thanks to our material expertise and manufacturing know-how, we provide a complete portfolio of steel grades, used and approved by all major Oil and Gas companies, including proprietary high-yield grades – up to 160ksi – for all well environments.
- Our experts can help you select the most appropriate material for your application, simplifying your supply process and optimizing the associated costs.



FOR MORE INFORMATION ON OUR GRADES VISIT: WWW.EXPERTISE.VALLOUREC.COM

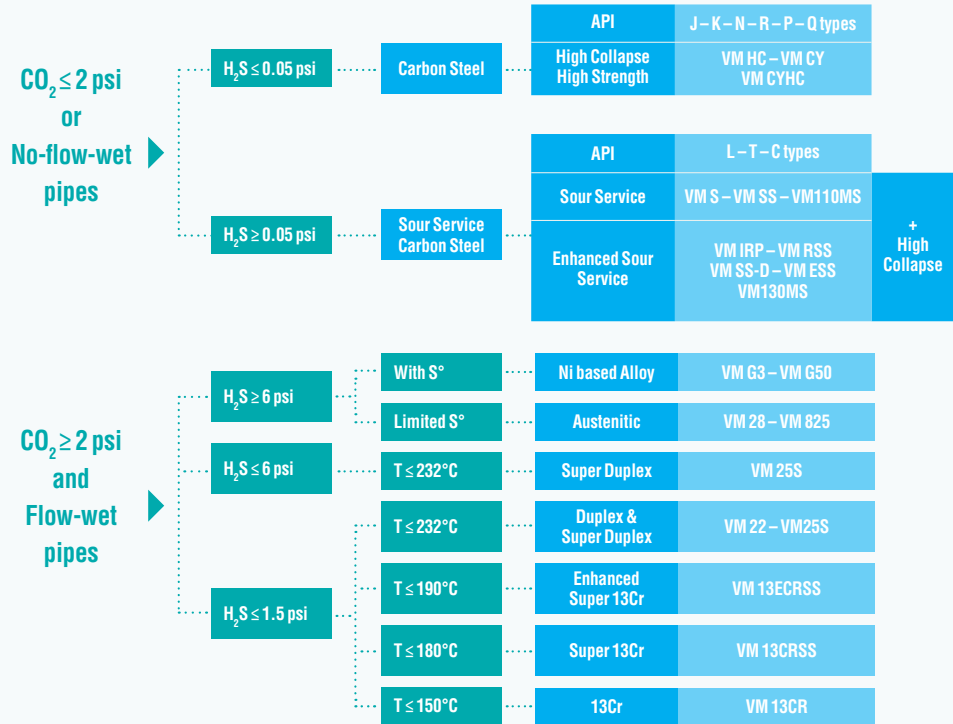
- In 1965, Vallourec invented VAM®, a key breakthrough innovation for tubing and casing.
- Every year VAM® designs new connections, extends product lines and qualifies new sizes to the most stringent specifications to meet the increasing complexity of accessing reservoirs and to adapt to new user requirements.



FOR MORE INFORMATION ON OUR CONNECTIONS VISIT: WWW.VAMSERVICES.COM

MATERIAL SELECTION

For standard applications and the most severe environments.



Vallourec grades for Special Applications				
Unconventional Enhanced API	Arctic Low temperature	Riser	Expandable	Corrosion mitigation
EC - HCE - RY T95 E - P110 MS	VMLT	VMR - RSS	VMET - 13ET	VM 1CR - 1CRHC - 3CR GRE liner

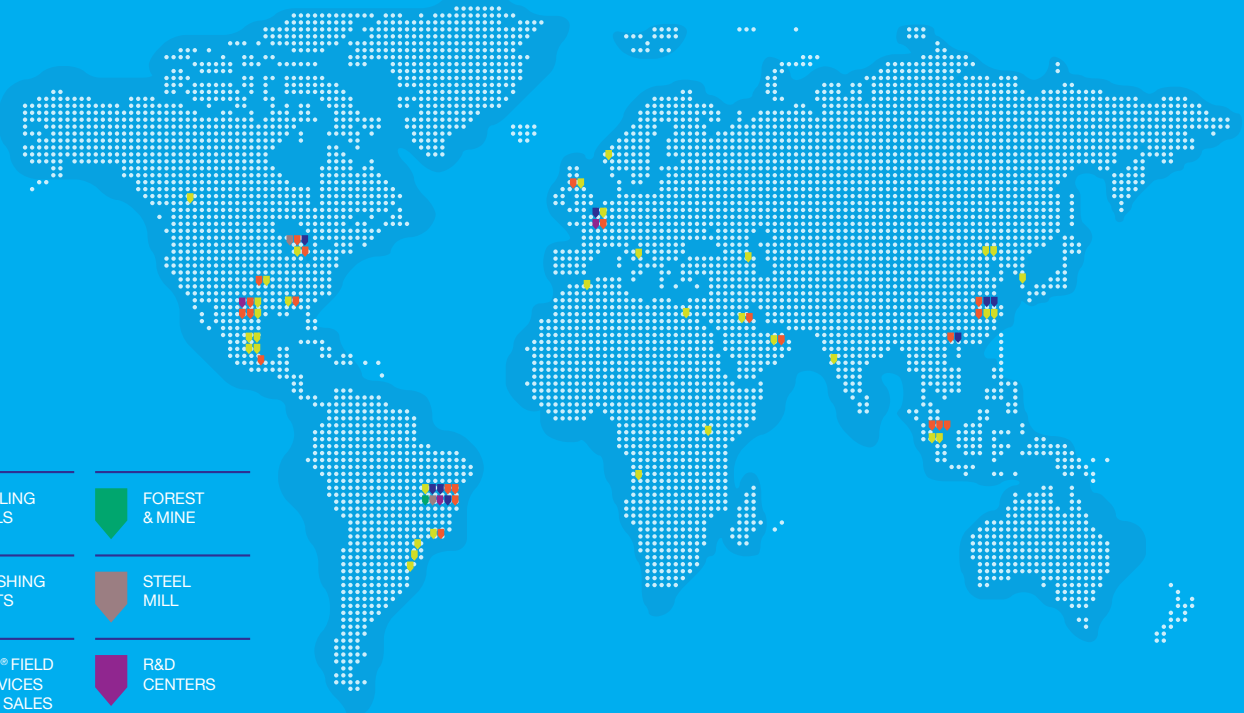
VAM® PRODUCT LINE

Our VAM® Research & Development teams can customize connection designs to new sizes or specific requirements.

	THREADED & COUPLED	SEMI-FLUSH	FLUSH
PREMIUM	VAM 21		
	VAM 21HT ●	VAM SLJ-3	VAM BOLT-III
	VAM TOP	VAM SLJ-III	VAM HTF-NR ●
	VAM TOP HT	VAM EPIC	VAM F-JL
	VAM TOP HC ●	VAM EDGE SF	
	VAM HP		
	VAM HTTC ●		
	VAM LOX		
	VAM TTRHW		
	VAM DRHW		
SEMI-PREMIUM	VAM SPRINT-TC ●	VAM SPRINT-SF ●	VAM SPRINT-FJ
	big 2		
	DINO VAM		
	DWC/C		

● High Torque

YOUR PARTNER, SETTING
THE PACE FOR INNOVATION
AND PERFORMANCE
EVOLUTION



ROLLING MILLS

FOREST & MINE

FINISHING UNITS

STEEL MILL

VAM® FIELD SERVICES AND SALES

R&D CENTERS

NEED MORE INFORMATION?

Information is available online on solutions.vallourec.com or by scanning the following QR code.



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