SYNERGEN 718 – METAL PRESERVATION

ORIGINALLY DEVELOPED TO PRESERVE THE INTERNAL SURFACE OF OCTG IN THE HARSH ENVIRONMENT OF THE NORTH SEA, SUNERGEN 781 IS A MOBILE LIQUID OF LOW VISCOSITY WHICH COMBINES THE FUNCTIONS OF WATER DISPLACEMENT WITH A LIGHT WATER-RESISTANT COATING. USED IN CONJUCTION WITH CLOSED END THREAD PROTECTORS, CORRECT SURFACE PREPARATION AND PRODUCT APPLICATION, THIS COATING WILL PROTECT BARE METAL AGAINST CORROSION, FOR EXTENDED PERIODS IN THE MOST SEVERE CLIMATIC CONDITIONS.

FEATURES

- EASY AND INEXPENSIVE TO APPLY
- LONG TERM INTERNAL PROTECTION, BEYOND TWO YEARS, WITH CORRECT PREPARATION AND APPLICATION
- PROFILE-FOLLOWING, THIN FILM PROTECTION
- DE-WATERING, SO CHASES MOISTURE FROM THE BORE
- MOBILITY WHEN APPLIED TO CHASE OUT DEBRIS
- COATING IS TRANSLUCENT ADDING INSPECTION
- THIN DRY FILM, NO SLUMPING, NO BLOCKING
- SUITABLE FOR MOST CLIMATES
- OCTG CAN BE RUN WITH THE COATING IN PLACE
- COMPATIBLE IN SERVICE WITH OIL-BASED/WATER-BASED DRILLING FLUIDS
- ESTABLISHED TRACK RECORD OF PERFORMANCE
- SPECIFIED BY MAJOR E&P OIL COMPANIES

APPLICATIONS

WELL MAINTAINED STOCKS OF OCTG ARE ESSENTIAL GIVEN THE SEVERE FORCES APPLIED DURING OFFSHORE OPERATIONS. FAILURE OF A PIPE STRING IS EXPENSIVE PARTICULARLY IN COMPARISON TO THE RELATIVELY LOW COST OF PRESERVATION WITH A QUALITY COATING, SUCH AS SYNERGEN 718. FORMULATED TO PRESERVE THE INTERNAL BARE METAL SURFACES OF OCTG, BOTH IN TRANSIT AND STORAGE, A FUNCTION IT HAS PERFORMED SUCCESSFULLY WORLDWIDE FOR OVER 30 YEARS. THE PROTECTION PROVIDED, WITH THE USE OF CLOSED END PROTECTORS, CORRECT SURFACE PREPARATION AND APPLICATION CAN EXCEED TWO YEARS, EVEN IN THE HARSHEST OF CLIMATES.

SYNERGEN 718 IS SUITABLE FOR THE DEWATERING AND PROTECTION OF ALL METALS AND ALLOYS COMMONLY ENCOUNTERED IN THE OILFIELD, ENGINEERING AND CONSTRUCTION INDUSTRIES. PRIMARILY FOR INTERNAL/CLOSED APPLICATIONS. EXAMPLES INCLUDE:

- TUBING
- CASING
- DRILL PIPE
- LINE PIPE
- FLANGES
- VALVES

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NEAT PRODUCT DATA	
PRODUCT REF / CODE NO.	SYNERGEN 718 / 8693
PACKAGING	STEEL TIGHT HEAD DRUM
PACK SIZE	170KG (NOMINALLY 210L)
PRODUCT APPEARANCE	CLEAR DARK BROWN LIQUID
FLASH POINT	40˚C
AUTO IGNITION TEMPERATURE	240˚C
SOLIDS CONTENT	19.5%-21.5%
ECOLOGICAL INFORMATION	BIODEGRADABLE WITH NO BIOACCUMULATION POTENTIAL
SHELF LIFE	5 YEARS IN UNOPENED CONTAINERS

COATING DATA	
COATING APPEARANCE	TRANSLUCENT VERY LIGHT BROWN (ALMOST INVISIBLE)
FLASH POINT	N/A TO CURED COATING
FILM THICKNESS	WET: 60-150 MICRONS DRY: 12-30 MICRONS
COVERAGE RATE	VARIES DEPENDING ON METHOD OF APPLICATION BUT FOR ESTIMATION 8M^2 PER L +10% CONTINGENCY
LENGTH OF PROTECTION	OPTIMUM PERFORMANCE >2 YEARS

PREPARATION FOR COATING

ANY BARRIER COATING SERVES TO PREVENT THE ESTABLISHMENT OF CORROSION CELLS BY PREVENTING MOISTURE FROM CONTACT WITH THE METAL SURFACE. IN ORDER TO GAIN MAXIMUM PERFORMANCE FROM SYNERGEN 718 IT IS THEREFORE IMPORTANT TO ENSURE THAT THE SURFACE IS CLEAN, DRY AND FREE FROM ACTIVE CORROSION CELLS BEFORE COATING COMMENCES.

SURFACE PREPARATION

THE SURFACE TO BE COATED SHOULD BE BLASTED WITH A DRY METALLIC ABRASIVE AND A WHITE METAL STATE ACHIEVED (SCANDINAVIAN STANDARD SA 2.5 FINISH ISO 8501:*LATEST EDITION*). AN EVEN SHARP PROFILE SHOULD BE ACHIEVED NOT EXCEEDING 75µ. TYPICALLY ON CARBON MATERIAL THE PROFILE ACHIEVED IS 50µ TO 75µ AND ON CHROME STEEL 35µ TO 50µ.THE AIR-LINE EMPLOYED IN BLASTING SHOULD BE DRY AND OIL-FREE. THE RECYCLING OF THE METALLIC ABRASIVE SHOULD BE APPROACHED WITH CARE, ENSURING THAT FILTRATION OR CYCLONE IS EMPLOYED TO REMOVE DUST AND CORROSION DEBRIS FROM THE SPENT MATERIAL.

ISO - SA 2.5 Very thorough blast cleaning

When viewed without magnification, the surface shall be free from visible oil, grease and dirt and shall be free from millscale, rust, paint coatings and foreign matter. Any remaining traces of contamination shall show only as slight stains in the form of spots or stripes

Cleaning method	Description	Swedish / ISO	SSPC	NACE
Abrasive blast	Near white metal / very thorough clean	SA 2.5 ISO 8501 :Latest Edition	SP 10	2

Example of surface prepared to SA 2.5

ON COMPLETION OF BLASTING AND INSPECTION THE TUBE SHOULD BE BLOWN OUT USING DRY AIR TO REMOVE ALL DUST.
THE TUBULAR SHOULD THEN PASS TO COATING WITH THE MINIMUM OF DELAY (4 HOURS MAXIMUM DEPENDING UPON AMBIENT CONDITIONS OF HUMIDITY AND TEMPERATURE CHANGE). IT SHOULD BE RECOGNISED THAT NEWLY EXPOSED "WHITE" STEEL IS LIABLE TO RAPID RE-OXIDATION.

COATING APPLICATION

AS WITH ALL NON-AQUEOUS COATINGS, SYNERGEN 718 SHOULD NOT BE APPLIED WITHIN 4˚C OF AMBIENT DEW POINT.

SYNERGEN 718 LENDS ITSELF TO A VARIETY OF APPLICATION TECHNIQUES WHICH INCLUDE SPRAYING, BRUSHING, DIPPING, SWABBING AND FLOOD-COATING. THE USE OF AN "AIRLESS" SPRAY SYSTEM WITH ROTATING NOZZLES TRAVELLING, CENTRED, THROUGH THE TUBE, AT CONSTANT RATE, HAS BEEN FOUND TO OFFER MAXIMUM ECONOMY. AN OPTIMISED SYSTEM CAN TYPICALLY USE ½ LITRE TO COAT A 4 ½ INCH RANGE 3 JOINT.

WET FILM THICKNESS DEPENDS TO A SIGNIFICANT EXTENT UPON AMBIENT TEMPERATURE AND UPON METHOD OF APPLICATION. TYPICAL WET FILM THICKNESSOVER PROFILE IS FROM 60µ TO 150µ. PROTECTIVE INTEGRITY IS ASSURED WHEN COATING PROFILES UP TO 40µ. THIS EFFECT IS DUE TO THE PROPERTY WITHIN SYNERGEN 718 WHICH ENABLES THE COATING TO FOLLOW THE METAL'S SURFACE CONTOUR RATHER THAN MERELY ACCUMULATING IN PROFILE TROUGHS.

THE FIRST FUNCTION OF SYNERGEN 718 IS TO CHASE OUT ANY MOISTURE PRESENT WITHIN THE PROFILE. MOISTURE DISPLACEMENT OCCURS IN THE LIQUID PHASE, AT THE SURFACE. IT IS IMPORTANT, THEREFORE, THAT AN EXCESS OF 718 IS USED. THE EXCESS THEN RUNS FROM THE TUBE, CARRYING WITH IT THE DISPLACED AND SUSPENDED MOISTURE. THE EXCESS SHOULD BE DRAINED FROM THE TUBE. IN FULLY HORIZONTAL CONFIGURATIONS THIS PROCESS MAY BE ASSISTED BY EITHER SPONGE-PLUG SWABBING OR BY LIGHTLY BLOWING OUT WITH DRY AIR. EFFLUENT SYNERGEN 718 (POSSIBLY CONTAINING DISPERSED WATER) SHOULD NOT BE RE-USED.

VISUAL INSPECTION SHOULD THEN ENSURE A UNIFORM CONTINUOUS WET FILM. THE DRY FILM OF 718 IS ALMOST INVISIBLE BUT MAY BE DETECTED BY TOUCH, QUANTITATIVE REMOVAL OR BY LIGHTLY SPOTTING WITH WATER, WHEN WATER DROPLETS WILL FORM ON THE SURFACE.

AN INITIAL DRYING PERIOD OF 15-45 MINUTES SHOULD BE ALLOWED FOR THE DISPERSAL OF SOLVENT VAPOUR PRIOR TO THE APPLICATION OF CLOSED END THREAD PROTECTORS. FAILURE TO ALLOW THE COATING TO DRY PRIOR TO CAPPING MAY RESULT IN THE GENERATION OF UNDESIRABLE PRESSURE-VACUUM CONDITIONS WITHIN THE CAPPED TUBE IN SUBSEQUENT STORAGE. THREAD PROTECTORS WITH SMALL VENT HOLE SHOULD ALSO BE CONSIDERED THAT WOULD ELIMINATE THIS CONCERN AND ALSO HELP REDUCE INTERNAL CONDENSATION.

SYNERGEN 718 REMOVAL

IN MOST CASES, REMOVAL OF THE LIGHT PROTECTIVE DEPOSITED BY SYNERGEN 718 WILL NOT BE NECESSARY AND STORED COMPONENTS MAY BE PRESSED DIRECTLY INTO SERVICE. SYNERGEN 718 WILL DISSOLVE IN OIL AND GAS STREAMS WITHOUT ADVERSE EFFECT UPON SUBSEQUENT PROCESSING OR USE.

WHERE THE REQUIREMENTS OF WELDING OR INSPECTION ARE SUCH THAT BRIGHT METAL MUST BE EXPOSED, SYNERGEN 718 MAY BE REMOVED USING READILY AVAILABLE HYDROCARBON SOLVENTS SUCH AS KEROSENE OR AGMA PROPRIETARY SOLVENTS AGMASOL PS AND AGMASOL PS40.

HEALTH AND SAFETY

SEE SEPARATE SAFETY DATA SHEET

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