

HDD MIXING CHART

COARSE SOILS		
DRILLING CONDITIONS	RECOMMENDED CETCO PRODUCTS DOSAGE PER 100 GALS FRESHWATER	VISCOSITY
SAND	HYDRAUL-EZ 25-30 LBS OR VELOCITY-PRO/SUPER GEL-X 20-25 LBS AND REL-PAC/REL-PAC XTRA LOW 0.5 LBS IF CLAY PRESENT - DRILL-TERGE 2-3 QTS	45-50
SAND & GRAVEL	HYDRAUL-EZ 30-35 LBS OR VELOCITY-PRO/SUPER GEL-X 25-30 LBS AND REL-PAC/REL-PAC XTRA LOW 0.5-1.5 LBS AND SUSPEND-IT 0.5 LBS IF CLAY PRESENT - DRILL-TERGE 2-3 QTS	50-70
GRAVEL & COBBLE	HYDRAUL-EZ 30-40 LBS OR VELOCITY-PRO/SUPER GEL-X 25-35 LBS AND REL-PAC/REL-PAC XTRA-LOW 0.5-1.5 LBS AND SUSPEND-IT 0.5-1 LBS	70-90

REACTIVE CLAYS or UNKNOWN		
DRILLING CONDITIONS	RECOMMENDED CETCO PRODUCTS DOSAGE PER 100 GALS FRESHWATER	VISCOSITY
NOT RECYCLING CLAY STICKY CLAY SWELLING CLAY	HYDRAUL-EZ 10-15 LBS OR VELOCITY-PRO/SUPER GEL-X 7-10 LBS AND INSTA-VIS PLUS 0.5-1 QT AND CLAY CUTTER 0.5 PTS AND DRILL-TERGE 2-3 QTS	35-40
RECYCLING CLAY STICKY CLAY SWELLING CLAY	HYDRAUL-EZ 10-15 LBS OR VELOCITY-PRO/SUPER GEL-X 7-10 LBS AND CLAY CUTTER DRY 0.25-1 LB AND DRILL-TERGE 2-3 QTS	35-40
UNKNOWN	HYDRAUL-EZ 25-35 LBS OR VELOCITY-PRO/SUPER GEL-X 15-25 LBS AND REL-PAC XTRA-LOW 0.5-1.5 LBS	45-55
EXCESSIVE TORQUE	CETCO C-LUBE 1-2 GALS	NA

1. MAKE-UP WATER - Add SODA ASH at a rate of 0.25 TO 0.5 LBS per 100 GAL freshwater to adjust pH to 8.5-9.5.
2. Marsh Funnel viscosity measured in seconds per quart.
3. Reamer selection is critical to break up clay to particle sizes that will suspend and flow freely. Ample pump rates for coarse and fine/reactive soils are necessary to maintain bore stability and flow. SUPER PAC at 0.5-1 QT/100 GAL can be substituted for REL-PAC.

North America: 847.851.1800 | 800.527.9948 | www.CETCO.com

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