

# Impregnated Cutters

CNPC USA impregnated cutters are engineered for unparalleled durability and efficiency, enabling superior performance in extreme drilling conditions. Designed to withstand challenging geologies at high temperatures, these advanced cutters reduce downtime and operational costs while maximizing productivity.



Unique aggregate encapsulation providing superior performance

## APPLICATIONS

- Complex and abrasive strata (chert)
- Long well lengths where POOH is costly and counterproductive
- Precise control desired in complex subsurface environment
- High temperature environments where cutter must withstand extreme conditions without compromising performance

## FEATURES and BENEFITS

- Proprietary blend of diamond mesh that increase diamond particle retention.
- Proven field experience with comparatively superior ROP
- Equating to fewer trip outs and short drilling times.
- Coarse center diamond to increase ROP.
- High wear resistance resulting in high ROP.



Left: S5 Ø13.5x18 mm cylinder Right: S5 in drill bit after tripped out of well.

## SPECIFICATIONS

- Field proven 13.5mm ODx18mm OL and 15.875mm ODx8mm OL. Additional sizes available upon request.
- Matrix hardness of 60 HRC

## FIELD TRIALS

- Field deployment in Longtan Formation, China.
- Lithology: limestone, shale
- Drilling time was 28.35 hrs over 429 m, resulting in 15.13 m/h ROP
- Average competitor ROP 6.83 – 9.55 m/h
- Intact blades, no mud pack, unblocked water holes
- Drill bit freshness 70%

Bit	Well Section (m)	Drilling Length (m)	Drilling Time (h)	ROP (m/h)
CNPC S5	887-1316	429	28.35	15.13
Offset	780-1230	450	66.02	6.83
Offset	780-1217	437	45.87	9.55
Offset	785-1201	426	53.55	7.79

Tabulated values of the drilling results for a field run compared to adjacent wells using other cutters.