



NATIONAL METALLURGICAL ACADEMY OF UKRAINE

Technology and equipment for thermal strengthening of stamped couplings for pipelines with the diameter up to 1420 mm per strength level X80 (K65)

Purposes and implication

The technology allows to manufacture low-carbon low-alloy stamped couplings with the diameter up to 1420 mm (wall thickness from 14 mm to 100 mm) per strength level X80 (K65) for pipelines that meet standard operational properties and reduce product wall thickness.

Key characteristics of the developed technology

To strengthen couplings there has been developed thermal strengthening mode, tempering, structural and technological parameters for quenching equipment, water cooling medium that allows to receive in product metal ferrite-bainite or bainite structure and standard properties. There are no analogues of the technology in the territory of CIS.



Comparison with the world analogues

The technology corresponds to the best world analogues.

Intellectual property rights protection

Over ten patents for the utility model registered in Ukraine and Russia.

Market demand

The demand for high-quality couplings is approximately counted as follows: over 100 tons of parts are needed for 100 km of oil and gas pipeline, pump or compressor house require over 100 tons of parts per 100 km. Major oil and gas pipelines have been under operation for over 30-40 years in CIS, it exceeds their warranty period and requires overhaul and renewal.

Availability of the technology

The technology and equipment were implemented in the main plant that produces pipeline couplings in Chelyabinsk, Russia in 2005.

DEPARTMENT OF INTELLECTUAL PROPERTY AND
SCIENTIFIC RESEARCH COMMERCIALIZATION

prospect Haharina, 4, Dnipro, Ukraine
e-mail: projdak@metal.dmeti.dp.ua; +38 056 745 4196

DEPARTMENT OF THERMAL TREATMENT OF METALS

E-mail: leonid_deyneko@i.ua; +38 095-65-35-414