Patent Claims

1. A method for producing seamless oilfield pipes having a length of greater than 7 m, in particular up to 200 m, an external diameter of greater than 20 mm but smaller than 200 mm, and a wall thickness of greater than 2.0 mm but smaller than 25 mm, of steel with increased strength and improved toughness of the material by immediate rapid cooling after heat forming, wherein a cooling medium at an increased pressure is applied to the outside surface of the pipe circumferentially for a length of more than 400 times the thickness of the pipe wall within a period of at most 20 sec after the last forming by means of stretch reduction at a temperature greater than 700 °C but below 1050 °C in a continuous process, said cooling medium being applied in an amount which produces an equivalent cooling rate of greater than 1 °C/sec of the pipe wall over the length of the pipe to a temperature in the range of 500 °C to 250 °C in rapid cooling, after which the pipe is cooled further in air to room temperature, wherein steel with a concentration of the respective alloy elements and accompanying elements and/or contaminating elements, each given in % by weight, is used for pipe production:

Carbon (C)	0.03 to 0.5
Silicon (Si)	0.15 to 0.65
Manganese (Mn)	0.5 to 2.0
Phosphorus (P)	max. 0.03
Sulfur (S)	max. 0.03
Chromium (Cr)	max. 1.5
Nickel (Ni)	max. 1.0
Copper (Cu)	max. 0.3
Aluminum (Al)	0.01 to 0.09
Titanium (Ti)	max. 0.05
Molybdenum (Mo)	max. 0.8
Vanadium (V)	0.02 to 0.2
Tin (Sn)	max. 0.08
Nitrogen (N)	max. 0.04
Niobium (Nb)	max. 0.08
Calcium (Ca)	max. 0.005
Iron (Fe)	balance.

2. The method according to Claim 1, wherein rapid cooling of the outside surface of the pipe begins at a temperature below 950 °C.

3. The method according to Claim 1 or 2, wherein after the rapid cooling, a targeted reheating of the pipe wall is conducted upon further cooling of the pipe in air.

~~4. The method according to any one of Claims 1 to 3, wherein steel with a concentration of the respective alloy elements and accompanying elements and/or contaminating elements, each given in % by weight, is used for pipe production:~~

~~Carbon (C) 0.05 to 0.5~~
~~Silicon (Si) 0.15 to 0.65~~
~~Manganese (Mn) 0.5 to 2.0~~
~~Phosphorus (P) max. 0.015~~
~~Sulfur (S) max. 0.005~~
~~Chromium (Cr) max. 1.0~~
~~Nickel (Ni) max. 1.0~~
~~Copper (Cu) max. 0.3~~
~~Aluminum (Al) 0.01 to 0.09~~
~~Titanium (Ti) max. 0.02~~
~~Molybdenum (Mo) max. 0.8~~
~~Vanadium (V) 0.02 to 0.2~~
~~Tin (Sn) max. 0.08~~
~~Nitrogen (N) max. 0.04~~
~~Niobium (Nb) max. 0.08~~
~~Calcium (Ca) max. 0.005~~
~~Iron (Fe) balance.~~

45. The method according to any of c~~C~~laims 1-34, wherein the steel for pipe production has at least one element at a content, given in % by weight, of:

Carbon (C)	0.05 to 0.35
Phosphorus (P)	max. 0.15
Sulfur (S)	max. 0.005
Chromium (Cr)	max. 1.0
Titanium (Ti)	max. 0.02.

56. A device for producing seamless oilfield pipes having a length of 7 m, in particular up to 200 m, an external diameter of greater than 20 mm but smaller than 200 mm, and a wall thickness of greater than 2.0 mm but smaller than 25 mm, of steel with increased strength and improved toughness of the material by rapid cooling after forming, characterized in that a device for stretch-reducing a pipe is arranged ~~immediately~~ upstream of a device for applying cooling medium onto the surface of the pipe, wherein, arranged downstream of the last forming mill of the stretch-reducing device in rolling direction, a switchable cooling through-zone having ~~a length of greater than 400 times the pipe wall thickness and~~ a plurality of distributor rings for a cooling medium that can be positioned in different positions in longitudinal direction and are

arranged concentrically around the rolled material, each with at least three nozzles oriented essentially towards the axis is provided, wherein each distributor ring or each group of same can be supplied with cooling medium in a throughput-regulated process wherein steel with a concentration of the respective alloy elements and accompanying elements and/or contaminating elements, each given in % by weight, is used for pipe production:

Carbon (C)	0.03 to 0.5
Silicon (Si)	0.15 to 0.65
Manganese (Mn)	0.5 to 2.0
Phosphorus (P)	max. 0.03
Sulfur (S)	max. 0.03
Chromium (Cr)	max. 1.5
Nickel (Ni)	max. 1.0
Copper (Cu)	max. 0.3
Aluminum (Al)	0.01 to 0.09
Titanium (Ti)	max. 0.05
Molybdenum (Mo)	max. 0.8
Vanadium (V)	0.02 to 0.2
Tin (Sn)	max. 0.08
Nitrogen (N)	max. 0.04
Niobium (Nb)	max. 0.08
Calcium (Ca)	max. 0.005
Iron (Fe)	balance.

67. The device according to Claim 56, characterized in that the nozzles each establish a pyramid-formed cooling medium stream, which widens in the direction of the spray.

78. The device according to Claim 67, characterized in that the cooling medium stream has a rectangular cross-sectional shape in length direction due to the nozzle design and the longer axis of the rectangle is oriented obliquely towards the axis of the pipe.

89. The device according to Claim 76, characterized in that a supply of cooling medium to the cooling through-zone can be switched depending on the position of the pipe ends in the same.