Method for producing a steel part comprising by weight: $0.05\ \% \leq C \leq 0.15\ \%$, $0.01\ \% \leq Si \leq 1\ \%$, $1.2\ \% \leq Mn \leq 2\ \%$, $0.1\ \% \leq Cr \leq 2\ \%$, $0.001 \leq Al \leq 0.1\ \%$, $0.003\ \% \leq N \leq 0.01\ \%$, $0 \leq S \leq 0.015\ \%$, $0 \leq P \leq 0.015\ \%$,$0\ \% \leq Ni \leq 1\ \%$,$0\ \% \leq B \leq 0.01\ \%$, $0\ \% \leq Mo \leq 1\ \%$, $0\ \% \leq Ti \leq 0.04\ \%$, $0\ \% \leq Nb \leq 0.1\ \%$, $0 \leq V \leq 0.5\ \%$ the remainder consisting of iron and unavoidable impurities, annealing this semi-finished product at an annealing temperature strictly lower than the Ac1 temperature of the steel; cooling it down to room temperature; cold forming the semi-finished product into a cold formed product; subjecting the cold formed product to a heat treatment comprising heating the cold formed product to a heat treatment temperature greater than or equal to the full austenitisation temperature Ac3 °F the steel; and quenching to room temperature; optionally reheating the product at a holding temperature from 180 °C to 400 °C for a time from 15 minutes to 2 hours.