

How does normalizing differ from annealing?

Normalizing Steel: Definition, Property Effects and EN 10216-2 Data

Topic	Normalizing	Annealing
Thermal route	Heating into the grade-defined range and cooling as specified; +N commonly uses air cooling	The annealing type determines the cycle; it may use slow cooling, isothermal holding or another route
Common purpose	Refine/homogenize structure and establish the specified delivery condition	Reduce hardness, restore ductility, relieve stress or develop a specified structure depending on annealing type
Hardness / strength	Often higher than full annealing of a comparable steel, but the actual result is steel- and cycle-dependent	Often used to soften or improve ductility; the actual result depends on annealing type
EN 10216-2 use	+N and +NT are explicitly assigned to multiple grades	+I is assigned to specific grades; other annealing routes belong to the applicable product specification

Source / basis: <https://niktrd.com/normalizing>