

Hardness

In order to assure the unique wedge locking function of the Nord-Lock® washers, the hardness of the mating surfaces should not exceed the hardness of the Nord-Lock® washers.

The unique wedge-locking action of the Nord-Lock® washers can easily be verified. Tighten the bolted joint with Nord-Lock® washers, then untighten. During untightening, sliding must always occur between the pair of Nord-Lock® washers. Upon overriding of the cam faces a “click effect” should be felt when the nut/bolt comes loose. Ocular inspection of the mating surfaces should show clear impression marks made by the Nord-Lock® washers. When all these criteria are fulfilled, Nord-Lock® washers will always safely lock bolted joints exposed to severe vibration or dynamic loads.

NORD-LOCK® Hardness Table

Washer type	Range	Zinc flake coated fIZnnc - 600	Non coated
Steel washers (Through hardened)	NL3 - NL42 NL45 - NL130	≥ 465 HV1 ≥ 465 HV1	
Stainless steel washers (Surface hardened)	NL3 ss - NL80 ss		≥ 520 HV0.05

Hardness Conversion Table

* The surface hardness, according to ISO 898-1, indicated in Vickers.

Vicker HV	Brinell HB	Rockwell HRC	Rockwell HRA	8.8 bolt*	10.9 bolt*	12.9 bolt*
300	285	29,8	65,5			
310	295	31,0	65,8			
320	304	32,2	66,4		320 HV	
330	314	33,3	67,0			
335	319	33,9	67,3			
340	325	34,4	67,6			
350	333	35,5	68,1			
360	342	36,6	68,7			
370	352	37,7	69,2	375 HV		
380	361	38,8	69,8			
385	366	39,3	70,1			385 HV
390	371	39,8	70,3		390 HV	
400	380	40,8	70,8			
410	390	41,8	71,4			
420	399	42,7	71,8			
430	409	43,6	72,3			
435	414	44,1	72,5			
440	418	44,5	72,8			
460	437	46,1	73,6			465 HV
480	456	47,7	74,5			
500	475	49,1	75,3			
520	494	50,5	76,1			
540	513	51,7	76,7			

The Most Effective Bolt Securing System