

MEASURES AND FUNCTIONALITY

	TYPE OF SCREW LACKING	FUNCTIONAL PRINCIPAL	SECURING ELEMENTS	APPLICATION NOTES		
LOOSENING	PROTECTION AGAINST LOOSENING			Screws / Nuts	Washers	
				Property class	Hardness class	
					200 HV	300 HV
		Reduces the surface pressure if braced	Washer according to DIN EN ISO 7089 DIN EN ISO 7090 DIN 7349 DIN EN ISO 7092 DIN EN ISO 7093-1	8.8 / 8 10.9 / 10 A2-70 / A2-70	Yes No Yes	Yes Yes No
	Elastic if braced	Conical spring washer according to DIN 6796, Profiled lock washer a Serrated safety washer a	To reduce settling max. 20 µm The spring force has to be adapted to the preload.			
SELF LOOSENING	PROTECTION AGAINST SELF LOOSENING	Blocking, partly braced	Lock screw, lock nut a	To be used where screw connections with high preload forces are exposed to changing transverse loads. Not on hardened surfaces. The hardness of the bearing surface has to be lower than the one of the screw and the nut or the joint elements. Securing elements are only effective if they are directly placed underneath the screw head and the nut. For electrical applications.		
			Profiled lock washer a Pair of tapered washers Serrated lock washer a Profile ring a (material A2)			
		Adhesive	Microencapsulated adhesive according to DIN 267-27	To be used where screw connections with high preload forces are exposed to changing transverse loads and hardened surfaces do not permit the use of locking fasteners. Temperature-dependent. Use in electrical applications is not allowed. If adhesives are used, it is not allowed to lubricate the threads.		
			Liquid adhesive	The temperature limits of the adhesives used must be observed. Use in electrical applications is not allowed. If adhesives are used, it is not allowed to lubricate the threads.		
	PROTECTION AGAINST LOSS	Clamping	Prevailing torque type hexagon nuts DIN EN ISO 7040, DIN EN ISO 7042, Wire thread inserts DIN 8140 Screws with locking coating according to DIN 267-28	To be used where the primary aim of the screw assemblies is to retain a residual preload force and to secure the connection against falling apart. The temperature dependency has to be noted for nuts and screws with plastic insert. In case of electrical applications, there may not be any chip formation due to all-metal nuts.		