

# DIN EN ISO 898-3:2021-11 (E)

## Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 3: Flat washers with specified property classes (ISO 898-3:2018 + Amd 1:2020) (includes Amendment A1:2021)

---

<b>Contents</b>	<b>Page</b>
European foreword .....	3
<b>[A1]</b> European foreword to Amendment <b>[A1]</b> .....	4
Foreword .....	5
<b>[A1]</b> Foreword to Amendment <b>[A1]</b> .....	6
Introduction .....	7
<b>1</b> Scope .....	8
<b>2</b> Normative references .....	8
<b>3</b> Terms and definitions .....	9
<b>4</b> Symbols .....	9
<b>5</b> Designation system for property classes of washers and combination with property classes of bolts, screws, studs and nuts .....	9
<b>6</b> Materials .....	10
<b>7</b> Mechanical and physical properties .....	11
<b>8</b> Test methods .....	12
8.1 Hardness test .....	12
8.1.1 General .....	12
8.1.2 Hardness test on the washer bearing surface .....	13
8.1.3 Hardness determined on a transverse radial section through the washer .....	16
8.2 Decarburization test .....	17
8.2.1 General .....	17
8.2.2 Microscopic method .....	17
8.2.3 Hardness method .....	18
8.3 Carburization test .....	19
8.3.1 General .....	19
8.3.2 Test procedure .....	19
8.3.3 Requirements .....	19
8.4 Retempering test .....	19
8.4.1 General .....	19
8.4.2 Test procedure .....	19
8.4.3 Requirements .....	19
<b>9</b> Marking .....	20
9.1 General .....	20
9.2 Marking of washers .....	20
9.3 Marking of packages .....	20
<b>Annex A</b> (normative) Ductility test for washers of property class 380HV .....	21
<b>Bibliography</b> .....	24