

Ansell

# INDUSTRY GUIDE

METAL FABRICATION

## ANSELL PROTECTION SOLUTIONS FOR INDUSTRY PROCESSES

Ansell is dedicated to worker safety: we provide a comprehensive range of hand, arm and body protection solutions to cover needs across many industries. Before selecting a product, ensure a risk assessment of the hazards has been conducted to determine that the product will provide an appropriate level of protection. Ansell Guardian® Chemical can be consulted to provide an assessment of the level of chemical protection offered by our products and may assist in the risk assessment. The determination of suitability of Ansell hand, arm and body protection solutions is the final responsibility of the user.

| EN 388 – Mechanical protection   |  |              |     |      |      |      |    |
|--|--|--------------|-----|------|------|------|----|
| This standard applies to all kinds of protective gloves in respect of physical and mechanical aggressions caused by abrasion, blade cut, puncture and tearing. |  |              |     |      |      |      |    |
| Performance level rating   |  | 1            | 2   | 3    | 4    | 5    |    |
| <br>EN 388:2003<br>abcd   | <b>a</b> Abrasion Resistance (Cycles)            | 100          | 500 | 2000 | 8000 | –    |    |
|  | <b>b</b> Blade Cut Resistance (Coupe Test/Index) | 1.2          | 2.5 | 5.0  | 10.0 | 20.0 |    |
|  | <b>c</b> Tear Resistance (Newtons)               | 10           | 25  | 50   | 75   | –    |    |
|  | <b>d</b> Puncture Resistance (Newtons)           | 20           | 60  | 100  | 150  | –    |    |
| Expanded performance level rating according to EN 388:2016 (a–f)   |  | A            | B   | C    | D    | E    | F  |
| <br>EN 388:2016<br>abcdef   | <b>e</b> EN ISO Cut Resistance (Newtons)         | 2            | 5   | 10   | 15   | 22   | 30 |
|  | <b>f</b> EN Impact Protection                    | PASS or FAIL |     |      |      |      |    |

Note: Level X can also be applied for a through e above, which means “not tested” or “not applicable”

### EN 388:2016: main changes from the previous EN 388:2003 standard

#### 1. ABRASION

New abrasion paper used in testing.

#### 2. CUT

New procedure for Coupe Test which also determines if dulling occurs. If dulling occurs, the new EN ISO 13977 test method becomes the reference whilst the Coupe Test would only be indicative.

#### 3. IMPACT

Test method for areas claiming impact protection. “P” for pass whilst no code will apply in case of fail.

| EN ISO 374 – Chemical protection and/or protection against micro-organisms  |   |  |     |  |     |     |       |  |
|---|---|--|-----|--|-----|-----|-------|--|
| This standard specifies the capability of gloves to protect the user against chemicals and/or micro-organisms.                      |   |  |     |  |     |     |       |  |
| Micro-organisms   |   |  |     |  |     |     |       |  |
| Performance levels  |   | 1  | 2   | 3  |     |     |       |  |
| <br>EN 374:2003<br>EN level ≥ 2                  | <p><b>Old:</b> AQL (Acceptable Quality Level) for liquid penetration. A high index number is poor and a low index number is good. Gloves need to pass water and air leak test, and this test method remains unchanged as per the new EN ISO 374 standard.</p> | 4.0  | 1.5 | 0.65   |     |     |       |  |
|   | <p><b>New:</b> in addition to testing for protection from bacteria and fungi, each glove can be tested for its protection against viruses with a new viral penetration test.</p>  |  |     |  |     |     |       |  |
| <p><b>EN ISO 374-5:2016</b><br/>  <br/>VIRUS</p> |   |  |     |  |     |     |       |  |
| Chemical protection   |   |  |     |  |     |     |       |  |
| <br>EN 374:2003<br>XYZ                           | <p><b>Old:</b> breakthrough time &gt; 30 minutes for at least three chemicals from this list (XYZ represent the code letters for three of these chemicals for which the glove obtained &gt; 30 minutes breakthrough time).</p>                                | <p>A. Methanol<br/>B. Acetone<br/>C. Acetonitrile<br/>D. Dichloromethane<br/>E. Carbon disulphide<br/>F. Toluene</p> |     | <p>G. Diethylamine<br/>H. Tetrahydrofurane<br/>I. Ethyl acetate<br/>J. n-Heptane<br/>K. Sodium hydroxide 40%<br/>L. Sulphuric acid 96%</p> |     |     |       |  |
|   | <p><b>New:</b></p> <p><b>Type C</b> At least Level 1 performance (more than 10 minutes) against at least one chemical on the list – cuffs are also tested.*</p>   | <p><b>Additional chemicals</b><br/>M. Nitric acid 65%<br/>N. Acetic acid 99%<br/>O. Ammonium hydroxide 25%</p>       |     | <p>P. Hydrogen peroxide 30%<br/>S. Hydrofluoric acid 40 %<br/>T. Formaldehyde 37%</p>  |     |     |       |  |
|   | <p><b>Type B</b> At least Level 2 performance (more than 30 minutes) against at least three chemicals on the list – cuffs are also tested.*</p>   |  |     |  |     |     |       |  |
|   | <p><b>Type A</b> At least Level 2 performance (more than 30 minutes) against at least six chemicals on the list – cuffs are also tested.*</p>   |  |     |  |     |     |       |  |
| <br>EN ISO 374-1:2016<br>Type C                  |   |  |     |  |     |     |       |  |
| <br>EN ISO 374-1:2016<br>Type B<br>XYZ           |   |  |     |  |     |     |       |  |
| <br>EN ISO 374-1:2016<br>Type A<br>UWVXYZ        |   |  |     |  |     |     |       |  |
| Performance level   | 0   | 1  | 2   | 3  | 4   | 5   | 6     |  |
| Minutes   | < 10  | 10   | 30  | 60   | 120 | 240 | > 480 |  |

 The beaker icon (low chemical resistance/waterproof) has been eliminated.

\* Only if the glove is ≥ 40 cm



## METAL FABRICATION INDUSTRY PROCESSES



### 1. CASTING & MELTING

#### Applications:

- Foundry operations
- Handling materials with sharp or rough edges
- Handling parts in high heat areas

#### User needs:

- Abrasion and cut resistance
- Grip in dry environments
- Flame and contact heat resistance



**ActivArm® 42-474**  
(ex. Crusader® Flex)



**ActivArm® 70-765**  
(ex. Vantage®)



**ActivArm® 80-600**  
(ex. Powerflex®)



### 2. FORGING

#### Applications:

- Forging operations
- Forging shapes using presses or hammers
- Extruding, bending and punching shapes

#### User needs:

- Abrasion and cut resistance
- Grip in dry environments
- Flame and contact heat resistance



**ActivArm® 42-474**  
(ex. Crusader® Flex)



**ActivArm® 80-600**  
(ex. Powerflex®)



**ActivArm® 43-216**



### 3. STAMPING & CUTTING

#### Applications:

- Press shop operations
- Processing sheets, coils, tubes
- Cutting glass sheets, panels

#### User needs:

- Abrasion, cut, puncture, impact resistance
- Grip in both dry and slightly oily environments
- Contact heat resistance



**HyFlex® 11-501**



**HyFlex® 11-541**



**HyFlex® 11-735**



**RINGERS R-068**



### 4. MACHINING

#### Applications:

- Metalwork, glass processing
- Fabricating metal parts, glass sheets
- Assembly and inspection of components

#### User needs:

- Abrasion, cut, puncture and chemical resistance
- Grip in both dry and oily environments
- Dexterity, tactility



**HyFlex® 11-926**



**HyFlex® 11-751**



**HyFlex® 11-928**



### 5. LOGISTICS

#### Applications:

- Delivery of parts to production line
- Delivery of finished equipment
- Driving fork lifts and trailers

#### User needs:

- Abrasion, cut resistance
- Grip in both dry and oily environments
- Thermal protection against cold weather



**HyFlex® 11-537**



**ActivArm® 97-012**



**HyFlex® 11-849**



**RINGERS R-179**



### 6. FINISHING SHOP

#### Applications:

- Plating, coating, sealing, painting
- Applying finish to materials, products
- Handling application and cleaning tools

#### User needs:

- Paint compatible, anti-static clothing
- Silicone- and lint-free hand protection
- Sweat resistant garments



**AlphaTec® 58-735**



**AlphaTec® 58-330**



**MICROFLEX® 93-260**



**AlphaTec® 1800 COMFORT**  
(ex. MICROGARD®)



### 7. ASSEMBLY

#### Applications:

- Fastening components, parts
- Positioning equipment using hands, tools
- Adjusting panels, parts, components

#### User needs:

- Abrasion, cut resistance
- Grip in a dry environment
- Dexterity, tactility



**HyFlex® 11-531**



**HyFlex® 11-816**



**HyFlex® 11-818**



### 8. MAINTENANCE

#### Applications:

- Production line support and maintenance
- Equipment repair, maintenance
- Assembly and disassembly of equipment

#### User needs:

- Abrasion, cut, puncture, chemical resistance
- Dexterity, tactility
- Flame and contact heat resistance



**HyFlex® 11-840**



**HyFlex® 11-926**



**TouchNTuff® 93-250**



**RINGERS R-133**



**AlphaTec® 1800 STANDARD**  
(ex. MICROGARD®)

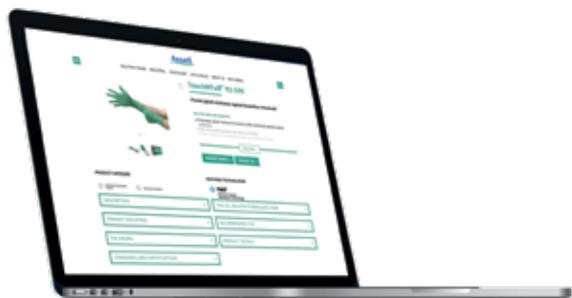
\* There will be a transitional period where there will be a mix of old and newly branded products in the market. Functionality and performance of the products will remain unchanged, the current products and the new ones have the same quality and same protection.

## GET MORE PRODUCT INFORMATION ONLINE

Our new website provides content rich of information on safety, solutions, documents and downloads, regulatory and company information with simple navigation of our full portfolio of hand, arm and body protection solutions.

➔ [www.ansell.com/industrial](http://www.ansell.com/industrial)

### PRODUCT INFORMATION



Your search options also include various downloadable data sheets:

- A Product sheets
- B EU declarations conformity
- C Instructions for use
- D Food declarations of product conformity

### INDUSTRIAL SECTION

Explore the new search and navigation features for a seamless web experience:

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#### 2 News & Campaigns

#### 3 Newsletters: Safety Briefing

#### 4 Ansell Solutions by Industries

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