

## 1.0 Durability and Climatic Zones

### Introduction

In general, the maximum durability for our products is ensured for vertical outdoor exposure only. We define a deviant application  $\geq 10^\circ$  as a horizontal application. General information regarding the basis of evaluating the maximal durability can be found in our data sheets which are based only on the condition that vertical application in a moderate climate is undertaken.

### Influencing Variables

In addition to horizontal/vertical application, also different climates can have a significant influence. Due to the additional influences like mechanical abrasion, chemical influences, altitude etc. it is not possible to transfer the maximum durability on each product. Consequently no warranty claims can be derived from the above information.

### Applicability

The specification is valid for products suitable for vertical and horizontal application only. For products recommended for vertical use only, the vertical durability applies only to vertical uses and a horizontal durability is not applicable.

### Special Locations

|                                     |  |
|-------------------------------------|--|
| High elevations                     | In mountain areas UV damage is increased over exposures at sea level. This is due to the air being thinner, and therefore damage from UV radiation increases significantly.  |
| Congested urban or industrial areas | Due to increased smog, pollutants, and particulates in the atmosphere in congested urban and industrial areas horizontal applications have reduced durability expectations. The horizontal application traps the chemicals on the surface of the material, increasing the impact of UV exposure and reducing durability. |

### Durability in years

| Climatic Zone 1 (moderate) |            | Climatic Zone 2 (humid / warm) |            | Climatic Zone 3 (dry / hot) |            |
|----------------------------|------------|--------------------------------|------------|-----------------------------|------------|
| vertical                   | horizontal | vertical                       | horizontal | vertical                    | horizontal |
| 12                         | 6          | 10                             | 5          | 8                           | 4          |
| 11                         | 5,5        | 9                              | 4,5        | 7                           | 3,5        |
| 10                         | 5          | 8                              | 4          | 6                           | 3          |
| 9                          | 4,5        | 7                              | 3,5        | 5                           | 2,5        |
| 8                          | 4          | 6                              | 3          | 4                           | 2          |
| 7                          | 3,5        | 5                              | 2,5        | 3                           | 1,5        |
| 6                          | 3          | 4                              | 2          | 2                           | 1          |
| 5                          | 2,5        | 3                              | 1,5        | 1,5                         | 0,75       |
| 4                          | 2          | 2                              | 1          | 1                           | 0,5        |
| 3                          | 1,5        | 1                              | 0,5        | 0,5                         | 0,25       |
| 2                          | 1          | -                              | -          | -                           | -          |
| 1                          | 0,5        | -                              | -          | -                           | -          |

## 1.0 Durability and Climatic Zones

| Climatic Zones – Country Overview |                               |                     |   |   |
|-----------------------------------|-------------------------------|---------------------|---|---|
| Climatic Zone 1<br>(moderate)     | Climatic Zone 2<br>(tropical) |                     |   | Climatic Zone 3<br>(subtropical)                          |
| Albania                           | Afghanistan                   | Kazakhstan          | Trinidad & Tobago                       | <b>All sites over 1000 m above sea level</b>              |
| Andorra                           | Angola                        | Kenya               | Turkey                                  |   |
| Austria                           | Armenia                       | Korea (South)       | Turkmenistan                            | Algeria   |
| Belarus                           | Australia**                   | Kyrgyzstan          | Uganda                                  |   |
| Belgium                           | Azerbaijan                    | Laos                | Uruguay                                 | Australia** – Above a line 100 km north of Perth/Brisbane |
| Bosnia & Herzegovina              | Bahamas                       | Lesotho             | Uzbekistan                              |   |
| Bulgaria                          | Bangladesh                    | Liberia             | Venezuela                               | Australia** – Desert areas                                |
| Croatia                           | Barbados                      | Madagascar          | Vietnam                                 |   |
| Czech Republic                    | Belize                        | Malawi              | Zambia                                  | Australia** – Desert areas                                |
| Denmark                           | Benin                         | Malaysia            | Zimbabwe                                |   |
| Ecuador                           | Bhutan                        | Maldives            |   | Bahrain   |
| Estonia                           | Bolivia                       | Mali                | Arizona*                                |   |
| Finland                           | Botswana                      | Malta               | California*                             | Chad  |
| France                            | Brazil                        | Mauritania          | Florida (Southern)*                     |   |
| Georgia                           | Burkina Faso                  | Mauritius           | Nevada*                                 | Egypt   |
| Germany                           | Burundi                       | Micronesia          | New Mexico*                             |   |
| Hungary                           | Cambodia                      | Mozambique          | Texas*                                  | Eritrea   |
| Iceland                           | Cameroon                      | Myanmar (Burma)     | Utah*                                   |   |
| Ireland                           | Cape Verde                    | Namibia             |   | Ethiopia  |
| Italy                             | Caribbean Isles               | Nepal               | <i>*Exceptions classified in Zone 3</i> |   |
| Kosovo                            | Central African Rep.          | New Zealand         |   | Iraq  |
| Latvia                            | Chile                         | Nicaragua           |   |   |
| Liechtenstein                     | China                         | Niger               |   | Jordan  |
| Lithuania                         | Colombia                      | Nigeria             |   |   |
| Luxembourg                        | Congo                         | Pakistan            |   | Kuwait  |
| Macedonia F.Y.R.                  | Costa Rica                    | Panama              |   |   |
| Moldova                           | Cote d'Ivoire                 | Papua New Guinea    |   | Lebanon   |
| Monaco                            | Cyprus                        | Paraguay            |   |   |
| Montenegro                        | Dominica                      | Peru                |   | Libya   |
| Netherlands, the                  | Dominican Republic            | Philippines         |   |   |
| Norway                            | East Timor                    | Portugal            |   | Mexico  |
| Poland                            | El Salvador                   | Puerto Rico         |   |   |
| Romania                           | Equatorial Guinea             | Rwanda              |   | Morocco   |
| Russia                            | Fiji                          | Samoa               |   |   |
| San Marino                        | Gabon                         | San Marino          |   | Oman  |
| Serbia                            | Gambia                        | Sao Tome & Principe |   |   |
| Slovakia                          | Ghana                         | Senegal             |   | Qatar   |
| Slovenia                          | Greece                        | Sierra Leone        |   |   |
| Sweden                            | Grenada                       | Singapore           |   | Saudi Arabia  |
| Switzerland                       | Guatemala                     | South Africa        |   |   |
| Ukraine                           | Guinea                        | Spain               |   | Somalia   |
| United Kingdom                    | Guinea-Bissau                 | Sri Lanka           |   |   |
| USA*                              | Guyana                        | Suriname            |   | Tunisia   |
| Vatican City                      | Haiti                         | Swaziland           |   |   |
|                                   | Honduras                      | Taiwan              |   | United Arab Emirates                                      |
|                                   | India                         | Tajikistan          |   |   |
|                                   | Indonesia                     | Tanzania            |   | Yemen   |
|                                   | Jamaica                       | Thailand            |   |   |
|                                   | Japan                         | Togo                |   |   |

### Important Notice

Information on physical and chemical characteristics is based upon tests, practical knowledge and experience. The values listed herein are typical values and are not for use in specifications. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Because of the variety of uses and applications, the purchasers should independently determine, prior to use, the suitability of this material to their specific use and carefully consider the suitability and performance of the product. The purchaser shall assume all risks for any use and application of the material. All specifications and technical data are subject to change without prior notice, errors and omissions expected. All warranty matters are regulated by our general terms and conditions.