

# CERTIFICATE

|                  |                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Client:          | DOLLE                                                                                                                                                                                                                                      |
| Product:         | DOLLE Toronto   Gardenspin (Ø185 cm)                                                                                                                                                                                                       |
| Designation:     | Product family                                                                                                                                                                                                                             |
| Description:     | Structural verification of the spiral staircase Toronto   Gardenspin (Ø185 cm). The spiral staircase has a maximum outer diameter of 185 cm. The maximum installation height is 3525 mm and it has maximum 14 treads and landing platform. |
| Material:        | Steps: Steel, S235 JRG2<br>Centre construction: Steel, S235 JRG2<br>Spacer: ABS<br>Step support pipe: Steel, S235 JRG2<br>Handrail: PVC-Rigid or LDPE<br>Balustrades: Steel, S235 JRG2                                                     |
| Particularities: | The structure is checked with FEM for deformations and stress.                                                                                                                                                                             |
| Eurocodes:       | EN 1991-1-1:2007 Eurocode 1: Actions on structures - Part 1-1<br>EN 1991-1-4:2007 Eurocode 1: Actions on structures - Part 1-4<br>EN 1993-1-8+AC:2007 Eurocode 3: Design of steel structures - Part 1-8                                    |
| References:      | [1] DOLLE® Design basis for ladders and stairs, rev. 01                                                                                                                                                                                    |
| Conclusion:      | DOLLE Toronto   Gardenspin (Ø185 cm) is calculated according to Eurocodes [1] and the design is found to be strong and stable.                                                                                                             |

ISO 9001 : 2015  
Management System Certification  
BUREAU VERITAS  
Certification Denmark A/S



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