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** **Centre construction: Steel, S235 JRG2** **Spacer: ABS** **Step support pipe: Steel, S235 JRG2** **Handrail: PVC-Rigid or LDPE** **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** **EN 1991-1-4:2007 Eurocode 1: Actions on structures - Part 1-4** **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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