

CERTIFICATE

Client:	DOLLE A/S
Product:	DOLLE Toronto Gardenspin Industria (Ø125 cm + Ø155 cm)
Designation:	Product family
Description:	Structural verification of the spiral staircase Toronto Gardenspin Industria (Ø125 cm + Ø155 cm). The spiral staircase has a maximum outer diameter of 155 cm. The maximum installation height is 3995 mm and it has maximum 16 treads and landing platform. The staircase is approved with the following treads:[Ø125 trimax] [Ø155 trimax] [Steel Ø125 with three balustrades/step] [Steel Ø155 with four balustrades/step]
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 (Ø125 cm + Ø155 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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