

# CERTIFICATE

<b>Client:</b>	<b>DOLLE</b>
<b>Product:</b>	<b>DOLLE Toronto   Gardenspin (Ø185 cm)</b>
<b>Designation:</b>	<b>Product family</b>
<b>Description:</b>	<b>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.</b>
<b>Material:</b>	<b>Steps: Steel, S235 JRG2</b> <b>Centre construction: Steel, S235 JRG2</b> <b>Spacer: ABS</b> <b>Step support pipe: Steel, S235 JRG2</b> <b>Handrail: PVC-Rigid or LDPE</b> <b>Balustrades: Steel, S235 JRG2</b>
<b>Particularities:</b>	<b>The structure is checked with FEM for deformations and stress.</b>
<b>Eurocodes:</b>	<b>EN 1991-1-1:2007 Eurocode 1: Actions on structures - Part 1-1</b> <b>EN 1991-1-4:2007 Eurocode 1: Actions on structures - Part 1-4</b> <b>EN 1993-1-8+AC:2007 Eurocode 3: Design of steel structures - Part 1-8</b>
<b>References:</b>	<b>[1] DOLLE® Design basis for ladders and stairs, rev. 01</b>
<b>Conclusion:</b>	<b>DOLLE Toronto   Gardenspin (Ø185 cm) is calculated according to Eurocodes [1] and the design is found to be strong and stable.</b>



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A handwritten signature in black ink, appearing to read 'Jan Riis Bovbjerg'.