

Rotodynamic pumps — Hydraulic performance acceptance tests — Grades 1, 2 and 3

Amendment No. 1

Correction amendment

Publishing and Approval Dates

Council of Standards Australia Approval: 7 February 2022

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Summary

This Amendment applies to the following elements:

- Clauses 3.1.1.4, 3.2.12, 3.2.15, 3.2.20.2, 3.2.24, 4.3.3.1
- [Tables 1, 8, C.1, I.1](#)
- [Figure A.6](#)
- Appendix A.4.3, A.4.7

Amendment Details

AS ISO 9906:2018 is amended as follows. The amendments should be inserted in the locations as instructed.

Element	Instruction/New text
CI 3.1.1.4	Delete "Note" and replace with "Note 1 to entry:".
CI 3.2.12	1 Delete Equation 6 and replace with the following: $H_x = z_x + \frac{p_x}{\rho \times g} + \frac{U_x^2}{2 \times g}$ 2 Delete Equation 7 and replace with the following: $H_{x(\text{abs})} = z_x + \frac{p_x}{\rho \times g} + \frac{P_{\text{amb}}}{\rho \times g} + \frac{U_x^2}{2g}$
CI 3.2.15	1 Delete Equation 10 and replace with the following: $\rho_m = \frac{\rho_1 + \rho_2}{2}$ 2 Delete Equation 11 and replace with the following: $H = z_2 - z_1 + \frac{p_2 - p_1}{\rho_m \cdot g} + \frac{U_2^2 - U_1^2}{2g}$
CI 3.2.20.2	Delete "(double inlet pumps with vertical or inclined axis)" from second paragraph.
CI 3.2.24	Delete Equation 14 and replace with the following:

Element

Instruction/New text

$$K = \frac{2\pi n Q'^{1/2}}{(gH')^{3/4}} = \frac{\omega Q'^{1/2}}{y'^{3/4}}$$

Tbl 1

Delete [Table 1](#) and replace with the following:

Table 1 — Alphabetical list of basic letters used as symbols

Symbol	Quantity	Unit
<i>A</i>	Area	m ²
<i>D</i>	Diameter	m
<i>e</i>	Overall uncertainty, relative value	%
<i>f</i>	Frequency	s ⁻¹ , Hz
<i>g</i>	Acceleration due to gravity ^a	m/s ²
<i>H</i>	Pump total head	m
<i>H_f</i>	Losses in terms of head of liquid	m
<i>k</i>	Equivalent uniform roughness	m
<i>K</i>	Type number	Pure number
<i>l</i>	Length	m
<i>M</i>	Torque	Nm
<i>n</i>	Speed of rotation	s ⁻¹ , min ⁻¹
NPSH	Net positive suction head	m
<i>p</i>	Pressure	Pa
<i>P</i>	Power	W
<i>q</i>	Mass flow rate ^b	kg/s
<i>Q</i>	(Volume) rate of flow ^c	m ³ /s
<i>Re</i>	Reynolds number	Pure number
<i>τ</i>	Tolerance factor, relative value	%
<i>t</i>	Students distribution	Pure number
<i>U</i>	Mean velocity	m/s
<i>v</i>	Local velocity	m/s
<i>V</i>	Volume	m ³
<i>y</i>	Specific energy	J/kg
<i>z</i>	Height above reference plane	m
<i>z_D</i>	Difference between NPSH datum plane and reference plane (see 3.2.20)	m
<i>η</i>	Efficiency	Pure number
<i>θ</i>	Temperature	°C
<i>λ</i>	Pipe friction loss coefficient	Pure number
<i>ν</i>	Kinematic viscosity	m ² /s
<i>ρ</i>	Density	kg/m ³
<i>ω</i>	Angular velocity	rad/s

^a In principle, the local value of *g* should be used. Nevertheless, for grades 2 and 3, it is sufficient to use a value of 9,81 m/s². For the calculation of the local value $g = 9,780\,3 (1 + 0,005\,3 \sin^2 \varphi) - 3 \times 10^{-6} \cdot Z$, where φ is the latitude and *Z* is the height above sea level.

^b An optional symbol for mass flow rate is *q_m*.