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
Cl 3.1.1.4	*Delete* "Note" and *replace* with "Note 1 to entry:".
Cl 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: $$H_{x(\text{abs})} = z_x + \frac{p_x}{\rho \times g} + \frac{P\text{amb}}{\rho \times g} + \frac{U_x^2}{2g}$$
Cl 3.2.15	1 *Delete* Equation 10 and *replace* with the following: $$\rho_{\text{m}} = \frac{\rho_1 + \rho_2}{2}$$ *2* *Delete* Equation 11 and *replace* with the following: $$H = z_2 - z_1 + \frac{p_2 - p_1}{\rho_{\text{m}} \cdot g} + \frac{U_2^2 - U_1^2}{2g}$$
Cl 3.2.20.2	*Delete* "⟨double inlet pumps with vertical or inclined axis⟩" from second paragraph.
Cl 3.2.24	*Delete* Equation 14 and *replace* with the following:

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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
A	Area	m^2
D	Diameter	m
e	Overall uncertainty, relative value	%
f	Frequency	s_{-1}, Hz
g	Acceleration due to gravity[a]	m/s^2
H	Pump total head	m
H_J	Losses in terms of head of liquid	m
k	Equivalent uniform roughness	m
K	Type number	Pure number
l	Length	m
M	Torque	Nm
n	Speed of rotation	s^{-1}, min^{-1}
NPSH	Net positive suction head	m
p	Pressure	Pa
P	Power	W
q	Mass flow rate[b]	kg/s
Q	(Volume) rate of flow[c]	m^3/s
Re	Reynolds number	Pure number
τ	Tolerance factor, relative value	%
t	Students distribution	Pure number
U	Mean velocity	m/s
v	Local velocity	m/s
V	Volume	m^3
y	Specific energy	J/kg
z	Height above reference plane	m
z_D	Difference between NPSH datum plane and reference plane (see 3.2.20)	m
η	Efficiency	Pure number
θ	Temperature	°C
λ	Pipe friction loss coefficient	Pure number
ν	Kinematic viscosity	m^2/s
ρ	Density	kg/m^3
ω	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/s^2. For the calculation of the local value g = 9,780 3 (1 + 0,005 3 $\sin^2 \varphi$) – 3 × $10^{-6} \cdot Z$, where φ is the latitude and Z is the height above sea level.

[b] An optional symbol for mass flow rate is q_m.