



Italia

# COMPLIANCE

with IEC EN 61508

Certificate No.: C-IS-722246912-02

**CERTIFICATE OWNER:** KOSO PARCOL S.r.l. a socio unico  
Via Isonzo, 2  
20010, Canegrate (MI) - Italy

**WE HEREWITH CONFIRM THAT**

**FLOATING BALL VALVES SERIES 750, 752, 753, 760**

**MEET THE SIL REQUIREMENTS DETAILED IN THE ANNEXED TABLES**

**FOR THE SAFETY FUNCTION:**

*SIF1: "correct switching on demand (open to closed) and tight for closing phase, in low demand mode of operation"*

*SIF2: "correct switching on demand (closed to open), in low demand mode of operation"*

**Examination result:** The above reported Floating Ball Valves Series 750, 752, 753, 760 were found to meet the standard defined requirements of the safety levels detailed in the following table (T-IS-722246912-02) according to IEC EN 61508, under fulfillment of the conditions listed in the Report R-IS-722246912-02, on which this Certificate is based

**Examination parameters:** Construction/Functional characteristics and reliability and availability parameters of the above Floating Ball Valves Series 750, 752, 753, 760

**Official Report No.:** R-IS-722246912-02

**Expiry Date** April, 11<sup>th</sup> 2024

**IT IS TO BE INTENDED THAT THE ABOVE OFFICIAL REPORT AND ITS ANNEXES ARE AN INTEGRAL PART OF THIS DOCUMENT**

**Reference Standard** IEC EN 61508:2010 Part 2, 4, 6, 7

Sesto San Giovanni, April, 12<sup>th</sup> 2021

TÜV ITALIA Srl



TÜV ITALIA Srl  
Industry Service Division  
Technical Manager

*Paolo Marcone*  
Paolo Marcone



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## SUMMARY TABLE

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<i>E/EE/EP safety-related system (final element)</i>	<b>Floating Ball Valves Series 750, 752, 753, 760 produced by Koso Parcol S.r.l.</b>	
<i>Size / Class</i>	$\frac{1}{2}'' \leq \text{NPS} \leq 6''$ Class150 to Class600 (752, 753) to Class2500 (750,760) Temperature range: -196°C - +200°C	
<i>System type</i>	Type A	
<i>Systematic Capability</i>	SC3	
<i>Safety Function Definition</i>	<i>SIF1: "Correct switching on demand (open to closed) and tight for closing phase, in low demand mode of operation"</i>	<i>SIF2: "Correct switching on demand (closed to open), in low demand mode of operation"</i>
<i>Max SIL<sup>(1)</sup></i>	<b>SIL3</b>	<b>SIL3</b>
$\lambda_{TOT}$	3,007E-08	3,007E-08
$\lambda_{NE}$	7,196E-09	1,029E-08
$\lambda_S$	0,000E+00	0,000E+00
$\lambda_{DD,PST}^{(2)}$	1,373E-08	1,456E-08
$\lambda_{DU,FPT}$	9,150E-09	5,224E-09
<i><math>\beta</math> and <math>\beta_D</math> factor</i>	10%	10%
<i>MRT</i>	8 h	8 h
<i>Hardware Safety Integrity</i>	Route 2 <sub>H</sub>	Route 2 <sub>H</sub>
<i>Systematic Safety Integrity</i>	Route 2 <sub>s</sub>	Route 2 <sub>s</sub>
<b>Remarks</b>		
<p>(1) The Safety Integrity Level (SIL) of the entire Safety Instrumented Function (SIF) must be verified via a calculation of <math>PFD_{AVG}</math> considering the redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with the minimum hardware fault tolerance (HFT) requirements.</p> <p>(2) Considering an automatic Partial Stroke Test.</p>		

SIL classification according to Standard IEC EN 61508 for Floating Ball Valves Series 750, 752, 753, 760 produced by Koso Parcol

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NOTE: The present table is integral part of the Document: C-IS-722246912-02

Date: April, 12<sup>th</sup> 2021