

# ISO 21012:2018-03 (E)

## Cryogenic vessels - Hoses

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>General requirements .....</b>	<b>2</b>
4.1	Design and construction .....	2
4.2	Materials .....	3
4.3	Cleanliness .....	3
4.4	Mechanical properties .....	4
4.4.1	Burst pressure .....	4
4.4.2	Pressure cycles .....	4
4.4.3	Bending test (optional, upon request of purchaser) .....	4
4.4.4	Resistance to abuse .....	4
4.4.5	Low temperature resistance .....	4
4.4.6	Leak tightness .....	4
4.4.7	Electrical properties .....	4
<b>5</b>	<b>Hose sample tests .....</b>	<b>4</b>
5.1	General .....	4
5.2	Non-destructive tests and inspection .....	6
5.2.1	Documentation of materials .....	6
5.2.2	Dimensional check .....	6
5.2.3	Cleanliness check .....	6
5.2.4	Pressure test .....	6
5.2.5	Leak test .....	6
5.2.6	Crushing test .....	6
5.3	Destructive tests .....	7
5.3.1	Hydraulic pressure cycling .....	7
5.3.2	Rolling bend cycling test .....	7
5.3.3	Hydraulic bursting test .....	7
5.3.4	Examination of sectional cut .....	7
<b>6</b>	<b>Production testing .....</b>	<b>8</b>
6.1	General .....	8
6.2	Pressure test .....	8
6.3	Leak test .....	8
<b>7</b>	<b>Marking .....</b>	<b>8</b>
<b>8</b>	<b>Cleaning .....</b>	<b>8</b>
<b>9</b>	<b>Periodic examination .....</b>	<b>8</b>
<b>10</b>	<b>Test certificate .....</b>	<b>9</b>
<b>Annex A (informative)</b>	<b>Typical hose assembly .....</b>	<b>10</b>

<b>Annex B (informative) Rolling bend cycling test for metallic hose assemblies and hose assemblies made of materials with a record of satisfactory use in cryogenic service .....</b>	<b>11</b>
<b>Annex C (informative) Rolling bend cycling test for hose assemblies constructed from materials or composites not commonly used in cryogenic service .....</b>	<b>13</b>
<b>Annex D (informative) Guidelines for periodic examination of transfilling hoses .....</b>	<b>15</b>