

# ISO 13678:2010-12 (E)

## Petroleum and natural gas industries - Evaluation and testing of thread compounds for use with casing, tubing, line pipe and drill stem elements

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Conformance .....</b>	<b>1</b>
2.1	Dual citing of normative references .....	1
2.2	Units of measurement .....	1
<b>3</b>	<b>Normative references .....</b>	<b>2</b>
<b>4</b>	<b>Terms and definitions .....</b>	<b>2</b>
<b>5</b>	<b>Thread compound characteristics .....</b>	<b>3</b>
5.1	Product characteristics .....	3
5.2	Physical and chemical characteristics .....	4
<b>6</b>	<b>Thread compound performance properties .....</b>	<b>8</b>
6.1	Small-scale test .....	8
6.2	Frictional properties .....	8
6.3	Extreme surface contact pressure (gall resistance) properties for casing, tubing and line pipe .....	9
6.4	Fluid sealing properties for casing, tubing and line pipe .....	10
<b>7</b>	<b>Quality assurance and control .....</b>	<b>10</b>
<b>8</b>	<b>Marking requirements .....</b>	<b>11</b>
8.1	Marking .....	11
8.2	Labelling .....	11
<b>Annex A (informative) API modified thread compound .....</b>		<b>12</b>
<b>Annex B (normative) Casing, tubing and line pipe reference standard formulation .....</b>		<b>16</b>
<b>Annex C (normative) Penetration test .....</b>		<b>18</b>
<b>Annex D (normative) Evaporation test .....</b>		<b>19</b>
<b>Annex E (normative) Oil separation test .....</b>		<b>20</b>
<b>Annex F (normative) Application/adherence test .....</b>		<b>21</b>
<b>Annex G (normative) Gas evolution test .....</b>		<b>22</b>
<b>Annex H (normative) Water leaching test .....</b>		<b>26</b>
<b>Annex I (informative) Frictional properties test .....</b>		<b>29</b>
<b>Annex J (informative) Extreme surface contact pressure (galling) test for casing, tubing and line pipe .....</b>		<b>39</b>

<b>Annex K (informative) Fluid sealing test for casing, tubing and line pipe .....</b>	<b>40</b>
<b>Annex L (informative) Corrosion inhibition tests .....</b>	<b>43</b>
<b>Annex M (informative) Compound high-temperature stability test .....</b>	<b>44</b>
<b>Bibliography .....</b>	<b>45</b>