

# ISO 19177-1:2026-03 (E)

## Geographic information - Geospatial application programming interface (API) for tiles - Part 1: Core

---

### Contents

Page

- Foreword ..... vi
- Introduction ..... vii
- 1 Scope ..... 1
- 2 Normative references ..... 1
- 3 Terms, definitions and abbreviated terms ..... 1
  - 3.1 Terms and definitions ..... 1
  - 3.2 Abbreviated terms ..... 4
- 4 Conformance ..... 4
  - 4.1 General ..... 4
  - 4.2 Requirements classes defining resources ..... 4
    - 4.2.1 Requirements class “Core” ..... 4
    - 4.2.2 Requirements class “Tileset” ..... 5
    - 4.2.3 Requirements class “Tilesets List” ..... 5
  - 4.3 Requirements classes defining data origins ..... 5
    - 4.3.1 Requirement class “Dataset Tilesets” ..... 5
    - 4.3.2 Requirements class “GeoData Tilesets” ..... 6
  - 4.4 Requirements classes defining query parameters ..... 6
    - 4.4.1 Requirements class “Collections Selection” ..... 6
    - 4.4.2 Requirements class “DateTime” ..... 6
  - 4.5 Requirements classes for specific resource representations ..... 6
    - 4.5.1 Requirements class “OpenAPI Specification 3.0 API definition” ..... 6
    - 4.5.2 Requirements class “XML Tileset Metadata” ..... 6
  - 4.6 Requirements classes for tile encodings ..... 7
  - 4.7 Declaration of conformance ..... 7
- 5 Conventions ..... 8
  - 5.1 General ..... 8
  - 5.2 Identifiers ..... 8
  - 5.3 Link relations ..... 8
  - 5.4 Use of HTTPS ..... 9
- 6 Overview ..... 9
  - 6.1 General ..... 9
  - 6.2 Evolution from OGC Web Services ..... 10
  - 6.3 Relationship to other OGC API standards ..... 11
  - 6.4 Using this document independently ..... 12
    - 6.4.1 Overview ..... 12
    - 6.4.2 Description of the domain ..... 12
    - 6.4.3 Description of the observed or measured properties ..... 13
    - 6.4.4 Available formats and tile response expectations ..... 13
    - 6.4.5 Limitations ..... 13
  - 6.5 How to approach an implementation of an OGC API standard ..... 13
  - 6.6 Use of the term “tiles” ..... 15
- 7 Requirements class “Core” ..... 16
  - 7.1 General ..... 16
  - 7.2 A tile ..... 16
    - 7.2.1 General ..... 16
    - 7.2.2 Operation ..... 16
    - 7.2.3 Parameter tileMatrix ..... 17
    - 7.2.4 Parameter tileRow ..... 17

7.2.5	Parameter tileCol	18
7.2.6	Parameter tileMatrixSetId (optional)	18
7.2.7	Response	18
7.2.8	Error conditions	20
7.3	Declaration of conformance classes	20
7.3.1	General	20
7.3.2	Response	20
<b>8</b>	<b>Requirements class “Tileset”</b>	<b>21</b>
8.1	Overview	21
8.2	Tileset resource	22
8.2.1	General	22
8.2.2	Tileset path	22
8.2.3	Response	22
8.3	Web-API-defined TileMatrixSets	25
8.3.1	General	25
8.3.2	Web API landing page	25
8.3.3	TileMatrixSets	26
8.3.4	TileMatrixSet	27
<b>9</b>	<b>Requirements class “Tilesets List”</b>	<b>27</b>
9.1	Overview	27
9.2	Tilesets list	28
9.2.1	General	28
9.2.2	Tilesets path	28
9.2.3	Response	28
<b>10</b>	<b>Requirements class “Dataset Tilesets”</b>	<b>29</b>
10.1	Overview	29
10.2	General	30
10.3	Web API landing page	30
10.3.1	General	30
10.3.2	Response	30
10.4	Dataset tilesets	31
10.4.1	General	31
10.4.2	Operation	31
10.4.3	Response	31
10.5	Tiles	31
10.5.1	General	31
10.5.2	Response	31
<b>11</b>	<b>Requirements class “GeoData Tilesets”</b>	<b>32</b>
11.1	Overview	32
11.2	General	32
11.3	Geospatial data resources	32
11.4	Geospatial data resources tilesets list	33
11.4.1	General	33
11.4.2	Operation	33
11.4.3	Response	34
11.5	Tiles	34
<b>12</b>	<b>Requirements class “Collections Selection”</b>	<b>34</b>
12.1	Overview	34
12.2	Operation	34
12.2.1	General	34
12.2.2	Parameter collections	34
12.2.3	Response	35
12.2.4	Error conditions	35
<b>13</b>	<b>Requirements class “DateTime”</b>	<b>35</b>
13.1	Overview	35
13.2	Describing the temporal extent	36
13.3	datetime query parameter request and response	36
13.4	subset=datetime query parameter request and response	37
13.5	Actual date and time response header	39
13.6	Closest date and time permission	39

<b>14</b>	<b>Requirements class “OpenAPI Specification 3.0”</b>	<b>39</b>
14.1	Overview	39
14.2	Web API OpenAPI description	40
14.2.1	General	40
14.2.2	Response	40
<b>15</b>	<b>Requirements class “XML Tileset Metadata”</b>	<b>43</b>
15.1	Overview	43
15.2	Tileset and Tilesets List XML representation	43
15.2.1	General	43
15.2.2	Operation	43
15.2.3	Response	43
<b>16</b>	<b>Requirements classes for tile encodings</b>	<b>44</b>
16.1	General	44
16.2	Overview	44
16.3	Requirements class “PNG”	44
16.4	Requirements class “JPEG”	45
16.5	Requirements class “TIFF”	46
16.6	Requirements class “NetCDF”	47
16.7	Requirements class “GeoJSON”	47
16.8	Requirements class “Mapbox Vector Tiles”	48
	<b>Annex A (normative) Abstract test suite</b>	<b>49</b>
	<b>Bibliography</b>	<b>62</b>