Comparison of Major 3D Printing File Formats

Feature	STL	OBJ	AMF	3MF
Primary Geometry	Triangular mesh	Polygon mesh	Mesh (curved support)	Mesh (extensible)
Supports Units	✖	✖	✔	✔
Color Support	✖	✔	✔	✔
Texture Support	✖	✔ (External MTL)	⚠️ Limited	✔
Multi-material	✖	⚠️ Limited	✔	✔
Material Definitions	✖	⚠️ External (MTL)	✔	✔
Metadata	✖	✖	✔	✔ (Rich)
Build Information	✖	✖	⚠️ Limited	✔
Compression	✖	✖	✔ (ZIP container)	✔ (ZIP container)
File Size Efficiency	⚠️ Medium (Binary)	✖ Large	⚠️ Medium (if Zipped)	✔ Small
Toolpath / G-code	✖	✖	✖	⚠️ Possible*

* 3MF supports toolpaths and G-code through specific extensions (like the Slice Extension).