

ISO 13067:2011-11 (E)

Microbeam analysis - Electron backscatter diffraction - Measurement of average grain size

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
3.1	Terminology associated with EBSD measurement of grain size	1
3.2	Terminology associated with grains and grain boundaries determined via EBSD	3
3.3	Terminology associated within grain size measurement	4
3.4	Terminology associated with data correction and uncertainty of EBSD maps	5
4	Acquiring a map by EBSD for grain size measurement	5
4.1	Hardware requirements	5
4.2	Software requirements	6
5	Acquiring the map for grain sizing by EBSD	6
5.1	Specimen preparation	6
5.2	Defining specimen axes	6
5.3	Stage positioning and calibration	6
5.4	Linear calibration	6
5.5	Preliminary examination	7
5.6	Choice of step size	7
5.7	Determination of the level of angular accuracy needed[7][8]	7
5.8	Choice of areas to be mapped and map size	9
5.9	Considerations when examining plastically deformed materials	9
6	Analytical procedure	10
6.1	Definition of boundaries	10
6.2	Post-acquisition treatment of raw data	11
6.3	Data-cleaning steps	11
6.4	Measurement of grain size	14
6.5	Representation of data	14
7	Measurement uncertainty	15
8	Reporting of analysis results	15
Annex A (informative)	Grain size measurement	16
Bibliography		18