# ESD ABS consumablesChemical technical specifications

ESDABS is a FFF 3D printing filament produced using a modified material of ABS and carbon nanotubes. ESD ABS has the same good heat resistance, toughness and impact resistance as ABS, and has good antistatic properties. The surface resistivity of the printed model can reach 10^5~10^7Ω, which is suitable for applications that require electrostatic discharge. Protection (ESD) fields, such as electronic equipment casings, fixture production, etc., are ideal consumables used in automobiles, aerospace, semiconductor industry, and electronic and electrical industries.

## Main features:

Antistatic/heat resistance/toughness

## The main parameters:

| physical properties | Test Methods | unit | Typical value |
|---|---|---|---|
| density | ISO 1183 | g/cm3 | 1.08~1.1 |
| Melt IndexMFR(220℃/2.16Kg) | ISO 1133 | g/10min | 8~12 |
| Water absorption (23℃/24h) | ISO 62 | % | <1 |
| Mechanical behavior | | | |
| Tensile Strength(XY) | ISO 527 | MPa | 35~37 |
| Elongation at break(XY) | ISO 527 | % | 5~7 |
| Elastic Modulus(XY) | ISO 527 | MPa | 1300~1500 |
| Bending strength(XY) | ISO178 | MPa | 60~61 |
| Notched impact strength(XY) | ISO180 | KJ/m$^2$ | 6~7 |
| Thermodynamic properties | | | |

| | | | |
|---|---|---|---|
| HDT@ 0.455 MPa(66 psi) | ISO75 | ℃ | 98 |
| Continuous use temperature | IEC 60216 | ℃ | 80 |

## Test sample printing conditions:

| | |
|---|---|
| Test Equipment | Guider IIS (Flashforge Technology) |
| Nozzle diameter | 0.4mm |
| Nozzle temperature | 230°C |
| printing speed | 50mm/s |
| wall thickness | 1.2mm |
| filling | 100% |
| standard spline | The specific dimensions are as shown in Appendix 1 |

## Recommended printing parameters:

| parameter | |
|---|---|
| Nozzle temperature | 220~240℃(recommended230℃) |
| Printing platform temperature | 100~120℃(recommended110℃) |
| Printing platform material | Tempered glass, BuildTak, carbon fiber panels |
| Nozzle diameter | Φ0.4 |
| model cooling fan | 0~20% |
| layer thickness | 0.12~0.3mm |
| printing speed | 40~60mm/s (recommended50mm/s) |
| Idling speed | 60~120mm/s |
| Printing environment temperature | room temperature~40℃ |
| Withdrawal length | 1~3mm |
| Withdrawal speed | 30~50mm/s |
| support material | Self-supporting, HIPS |

## Precautions:

To prevent moisture absorption and contamination, the packaging of consumables should be kept closed and intact before use. outFor the same reason, partially used supplies should be resealed before storage.

ESD ABS filaments easily absorb moisture, so it is recommended to dry them before use. Place consumables in

Dry in a hot air oven at 70°C for at least 5 hours to ensure the success rate and quality of printed models.

# Disclaimer:

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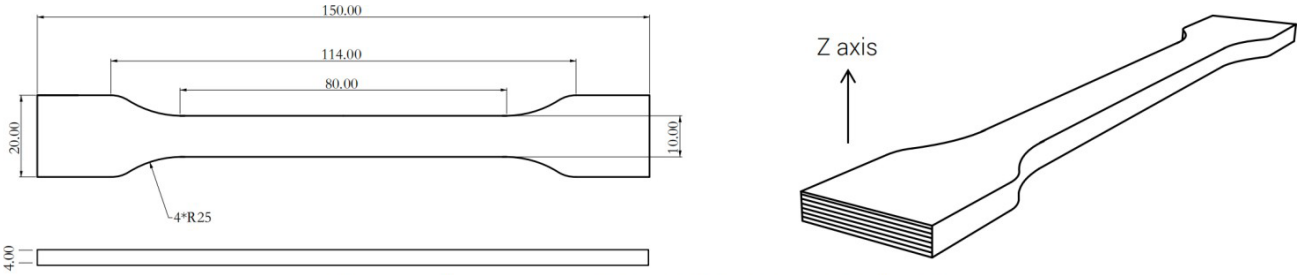
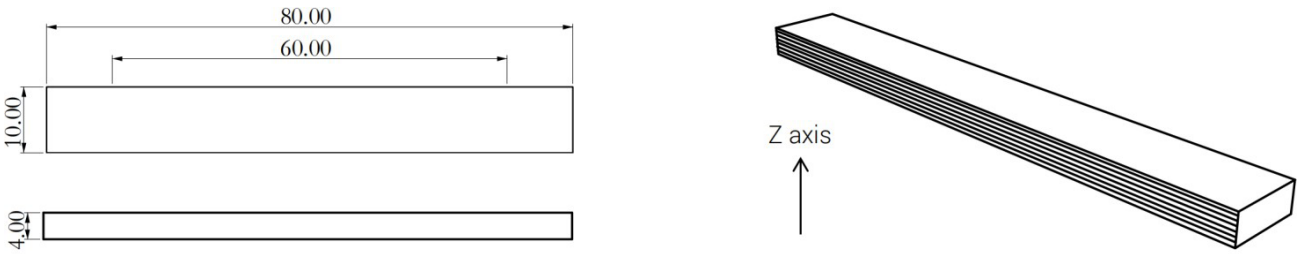
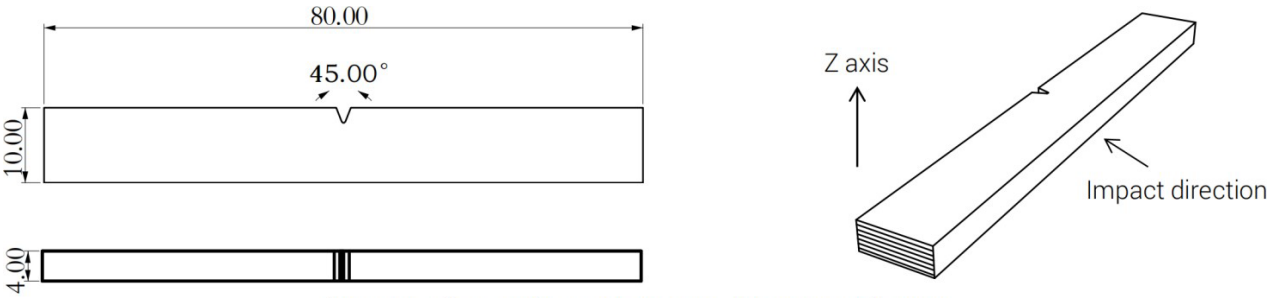
# Appendix 1: Test sample size and printing direction




Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)




Flexural testing specimen; ASTMD790 (ISO 178, GB/T 9341)




Impact testing specimen; ASTM D256 (ISO 179, GB/T 1043)