

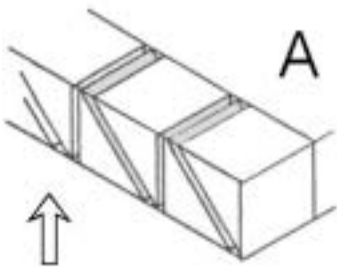
# CRYSTRAN'S ROUGH GUIDE TO CUTTING ZnSe & ZnS



Zinc Selenide and Zinc Sulphide materials grown by Chemical Vapour Deposition (CVD) exhibit a grain structure. For optimum polishing and optical performance this grain structure should be oriented correctly

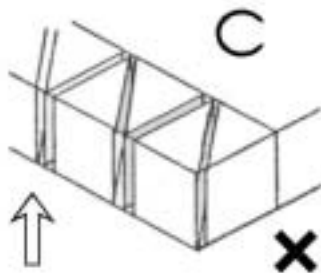
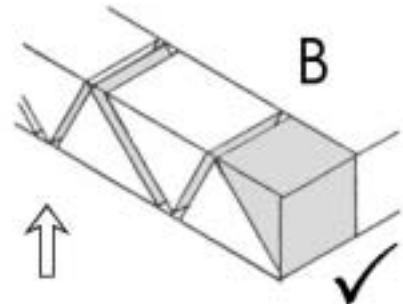
During Chemical Vapour Deposition the small crystallite grains align with the direction of growth, and are normal to the thickness of the sheet produced. For windows of normal thickness and aspect ratios the alignment of the grain therefore is rarely a problem as they are cut from the grown sheet such that within an optical window the grains align perpendicular to the surfaces. This is optimum orientation for lowest internal absorption and scatter.

With prisms, the cutting direction requires more consideration. It is recommended that the thickness of the strip material corresponds to the apex height of the prism. This ensures optimum crystallite orientation for most usual prism applications.



For typical 45° prisms the most obvious use of material is shown in (A) but it should be noted that this is not the optimum orientation.

The best choice is (B) and it also permits a higher limit on prism size or conversely allows thinner stock to be used. There is waste at the ends of the strip but this is small and so it may not be quite as economic as (A).



Cutting in direction (C) where the entire light beam runs at 90° to the grain structure should be avoided completely if at all possible.

Note that maximum available thickness of ZnSe and ZnS (FLIR) is approximately 60mm. Maximum available thickness of ZnS Cleartran is approximately 30mm

*This data sheet is advisory only, and is not intended to be comprehensive. Crystran Ltd cannot be responsible for any problems caused by wrongly specified material as a result of using this data sheet.*

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