

How much prism can you order in your lenses?

Here's what you need to know.

Each manufacturer has a formula that determines the maximum amount of prescribed prism that can be surfaced into a spectacle lens.

The maximum amount of prescribed prism that can be ordered can only be determined once the lens order is placed and the formula calculated to determine whether the result is over the surfaced prism maximum.

Let's talk about the variables in the prism surfacing formula:

Total prism is the largest contributor and should always be considered when designing lenses for your patients with prescribed prism. Total prism in lens production is more than just the prescribed prism. You have to consider prescribed, decentration, and thinning prism.

Prescribed prism: You cannot manipulate the **prescribed prism**, as this is what the patient needs in their new lenses to have the best vision possible.

Decentration prism: A direct result of decentering the lens during the blocking phase of the surfacing process. To decrease decentration prism: match the Frame PD to the patient's PD binocular PD closely as possible. (It is never recommended to order lenses with prescribed prism using a binocular PD. However, for this exercise in the fitting process, the binocular PD is used.) This will place the patient's pupils near the center of each lens horizontally and will decrease the need for decentration during the blocking phase of the surfacing process.

Since we are decreasing the decentration for blocking, we have effectively decreased the resulting decentration prism as well. If this step in the frame fitting is followed properly, you can realistically increase the amount of prism that can be surfaced into your lens of choice.

Prism thinning: Often employed to make progressive lenses more aesthetically pleasing. It is the process of adding yoked base down prism to make the thickness of the bottom of a progressive lens match the thickness of the top of that lens as closely as possible.

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Example:

If the minimum fitting height of your desired progressive lens choice is 14mm, the frame you choose for the patient should have no larger than a 16mm fitting height and roughly 10mm to 12mm of distance to the top of the frame.

14mm to 16mm fitting height will provide sufficient reading area without the worry of cutting off the near portion of the progressive corridor and 10mm to 12mm of distance above the fitting cross will provide sufficient distance viewing area. Taking care to ensure that the distance from fitting cross to both the top, and bottom of the frame are as equal as possible decreases the amount of thinning prism needed. This produces a highly functional progressive lens and increases the amount of prism that can be surfaced into the lens you are designing.

Index of refraction plays a major role. For instance, a prescription ordered with 4.75 Δ of prescribed prism is within the 4.00 Δ to 6.00 Δ maximum range. If this order were to be placed in 1.50 plastic or 1.53 Phoenix, the job will likely be rejected, even if we follow the proper fitting suggestions listed above. However, if ordered in 1.67 hi-index, and the proper fitting recommendations were followed, the likelihood of this job being successfully completed are extremely high.

Design the perfect pair of lenses

The next time you receive a prescription with prescribed prism, you'll feel more confident about designing the perfect pair of lenses for your patient. And it's all because you now understand the maximum surfaced prism range, the factors that affect that maximum, and how you can take steps to positively influence the outcome with proper fitting techniques.

Want to make sure your patients are getting the right lenses that match their prescribed prism needs? Contact your local Territory Sales Manager.