

**OBSOLETE**

Dæmon 0.51 implementation (obsolete)	
	or
	or <p>Incomplete, unused</p>
DXT5/BC3 (DXT5nm) <sup>1</sup> <p>DirectX orientation<sup>3</sup> (+Y, -Y, +Z)</p>	or  or <p>Height was upside down (Depth), required "parallax" material keyword, unused</p>
Previously recommended layout	

**Options**

specular scale, exponent

normal channel scale, flip

height scale, offset<sup>4</sup>

Dæmon 0.52+ implementation	
	or
glTF 2.0 packing (ORM) 	or
DXT5/BC3 (DXT5nm) <sup>1</sup> <p>DirectX orientation<sup>3</sup> (+Y, -Y, +Z) or material keyword: "normalFormat X Y Z"</p>	or  or <p>or material keyword: "normalFormat X Y Z"</p>
	or  or <p>Normal computed from height map<sup>4</sup></p>
Recommended layout	

<sup>1</sup> Do not do swizzle the channels yourself, let the Crunch texture compression tool do it, Z is reconstructed programmatically (normalization ensure proper results).

<sup>2</sup> Occlusion is not implemented yet, but if provided it must be stored in Red channel.

<sup>3</sup> Dæmon/quake3 materials expect DirectX normal convention because Xreal implemented them like Doom3 which followed DirectX convention despite being an OpenGL game.

<sup>4</sup> Normal map computation from height map is implemented but to be merged after Dæmon 0.52.0 release.

<sup>5</sup> Height scale and offset are implemented in engine and DarkPlaces compatibility layer but not yet in standard Dæmon materials at Dæmon 0.52.0 release time.

## Recommended texture formats

Lightmaps	Lossless WebP
Skyboxes	Lossy WebP
Normal maps	Normalized CRN (Unity/Dæmon variant with -rtopmp option)
Everything else	CRN (Unity/Dæmon variant)

