The invention relates to laser welding of at least two adjacent, abutting or overlapping work pieces in a welding direction using multiple laser beams guided to a welding region, wherein at least two of the multiple laser beams are coupled into the welding region so as to form a melt and at least one keyhole, each of said at least two laser beams having high intensity, such as provided by a disc laser or a fibre laser, and each having a beam parameter product (BPP) less than 10 mm*mrad, alternative less than 5 mm*mrad, alternative less than 1 mm*mrad, alternative less than 0.5 mm*mrad. A particularly improved melt formation and melt flow control is achieved.