Table 3.5 *Heavy, light and coarse European EN 13383 standard grading requirements*

	Class designation	ELL	NLL	NUL	EUL	M_{em}	
Heavy	Passing requirements kg	< 5% kg	< 10% kg	> 70% kg	> 97% kg	lower limit kg	upper limit kg
	10 000–15 000	6500	10 000	15 000	22 500	12 000	13 000
	6000–10 000	4000	6000	10 000	15 000	7500	8500
	3000–6000	2000	3000	6000	9000	4200	4800
	1000–3000	700	1000	3000	4500	1700	2100
	300–1000	200	300	1000	1500	540	690

	Class designation	ELL	NLL	NUL	EUL	M_{em}	
Light	Passing requirements kg	< 2% kg	< 10% kg	> 70% kg	> 97% kg	lower limit kg	upper limit kg
	60–300	30	60	300	450	130	190
	10–60	2	10	60	120	20	35
	40–200	15	40	200	300	80	120
	5–40	1.5	5	40	80	10	20
	15–300 *	3	15	300	450	45	135

	Class designation	ELL	NLL	NUL	EUL	
Coarse	Passing requirements mm	< 5% mm	< 15% mm	> 90% mm	> 98% mm	< 50% mm
	45/125	22.4	45	125	180	63
	63/180	31.5	63	180	250	90
	90/250	45	90	250	360	125
	45/180 **	22.4	45	180	250	63
	90/180 ***	45	90 ***	180 ***	250	NA

Notes

* = wide light grading, ** = wide coarse grading, *** = gabion grading, NLL = 20% and NUL = 80%. See Table 3.6 in Section 3.4.3.7 for additional information on standard gradings.

For example, to fulfill the mass distribution requirements for an EN standard heavy grading designated “3–6 tonnes” (or 3000–6000 kg), up to 10 per cent (by mass) may be below the nominal lower limit NLL of 3 t, and up to 30 per cent may be above the nominal upper limit NUL of 6 t. These undersize and oversize tolerances make the grading more practical to produce. The grading is allowed a further margin for borderline stones at the extremes using extreme lower (ELL) and extreme upper (EUL) limits. So for the 3–6 t example, ELL restricts the percentage below 2 t to 5 per cent and EUL limits blocks above 9 t to less than 3 per cent, see also Figure 3.21. Similar definitions with slightly different percentage requirements are introduced for light and coarse gradings.

The introduction of a system of standard gradings within EN 13383 has brought several advantages. For the producer, these mostly concern the economics of production, selection, stockpiling and quality control. The system enables engineers and producers to refer to a batch or consignment of stones by its designated bottom NLL and top sizes NUL (using masses or sieve sizes) with a meaning that is consistent to all. Standard gradings are considered essential for coarse and light gradings as these are selected by mechanical means. If non-standard gradings are specified, selection by mechanical means requires changing bar openings, new screen decks or completely new barrels. With only a few grading classes