13. Intangible assets and Goodwill

(all amounts in Euro thousands)

Group	Initial goodwill	Goodwill impairment	Total goodwill	Licences	Development expenditure	Trade-marks	Customer relation-ships	Other intangible assets	Total
Balance at 1 January 2015	**363,734**	**-6,226**	**357,508**	**21,663**	**368**	**26,507**	**29,719**	**6,379**	**442,144**
Additions	-	-	-	152	54	-	-	805	1,011
Disposals (NBV)	-	-	-	-	-	-	-	-144	-144
Reclassification of assets to/from property, plant & equipment (note 11)	-	-	-	-	-107	-	-	1,367	1,260
Impairment (note 29)	-	-3,990	-3,990	-	-	-	-	-	-3,990
Amortization charge (note 29)	-	-	-	-561	-	-1,741	-4,604	-1,867	-8,773
Exchange differences	22,888	-	22,888	185	-1	1,537	416	-191	24,834
Balance at 31 December 2015	**386,622**	**-10,216**	**376,406**	**21,439**	**314**	**26,303**	**25,531**	**6,349**	**456,342**
Balance at 1 January 2016	**386,622**	**-10,216**	**376,406**	**21,439**	**314**	**26,303**	**25,531**	**6,349**	**456,342**
Additions	-	-	-	305	-	-	-	1,957	2,262
Disposals (NBV)	-	-	-	-	-	-80	-	-	-80
Additions due to acquisition	86	-	86	-	-	-	-	-	86
Other reclassifications	-	-	-	91	-	-	-	-	91
Reclassification of assets from/to other intangible assets categories	-	-	-	-119	-	-	-	119	-
Reclassification of assets from property, plant & equipment (note 11)	-	-	-	-	-	-	2,043	1,057	3,100
Impairment (note 29)	-	-5,276	-5,276	-	-	-	-	-376	-5,652
Amortization charge (note 29)	-	-	-	-553	-	-1,465	-4,182	-834	-7,034
Exchange differences	-52,280	-	-52,280	-4,215	1	-5,297	-11,280	-928	-73,999
Balance at 31 December 2016	**334,428**	**-15,492**	**318,936**	**16,948**	**315**	**19,461**	**12,112**	**7,344**	**375,116**

Other intangible assets include mainly computer software.

(all amounts in Euro thousands)

Company	Trade-marks	Other intangible assets	Total
Balance at 1 January 2015	**81**	**2,228**	**2,309**
Additions	-	224	224
Reclassification of assets from property, plant & equipment (note 11)	-	1,354	1,354
Amortization charge (note 29)	-	-275	-275
Balance at 31 December 2015	**81**	**3,531**	**3,612**
Balance at 1 January 2016	**81**	**3,531**	**3,612**
Additions	-	1,080	1,080
Disposals (NBV)	-80	-38	-118
Reclassification of assets from property, plant & equipment (note 11)	-	60	60
Other reclassifications	-	91	91
Amortization charge (note 29)	-	-267	-267
Balance at 31 December 2016	**1**	**4,457**	**4,458**

13. Intangible assets and Goodwill (continued)

Impairment testing of goodwill

Goodwill acquired through business combinations has been allocated to the following cash-generating units ("CGU's") per region of operation.

Carrying amount of goodwill (by geographical segment):

(all amounts in Euro thousands)	2016	2015
Greece and Western Europe	10,209	12,719
North America	207,489	200,896
South Eastern Europe	53,923	56,673
Eastern Mediterranean	47,315	106,118
	318,936	**376,406**

The provision of goodwill impairment is charged to the income statement.

Key assumptions

The recoverable amount of all CGUs has been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated growth rates stated below.

The calculation of value-in-use for the Group's evaluated CGUs is most sensitive to the following assumptions:

- Sales volumes;
- Selling prices;
- Gross margin;
- Growth rate used to extrapolate cash flows beyond the specific projection period; and
- Discount rates

Sales volumes:

Volume assumptions have been provided by local management and reflect its best estimates as derived from sales forecasts for the development of which a combination of factors have been taken into consideration: past performance, local market growth estimates, infrastructure projects in which the company will participate (public investments), etc. In the USA, sales volume growth rates are also based on published industry research and take into account demographic trends including population growth, household formation, and economic output (among other factors) in the states where the Group operates. In addition to demographic trends, long-term growth rates take into account cement/concrete intensity in construction which has historically varied from state to state based on building codes, availability of raw materials, and other factors.

Selling prices:

Price assumptions have been provided by local management and reflect its best estimates. Factors that have been taken into consideration involve inflation, brand loyalty, growth rate of the regional economy, competition, production cost increases, etc. The Group has assumed the following compound annual growth rates for sales for the five year period.

Sales Growth	2016	2015
Greece and Western Europe	2.7% - 18.2%	5.5% - 27.6%
North America	4.2% - 9.4%	6.8% - 12.2%
South Eastern Europe	4.5% - 5%	6.5% - 8.9%
Eastern Mediterranean	12.7%	7.8%

13. Intangible assets and Goodwill (continued)

Gross margin :
Illustrates all cost of goods sold related factors and incorporates among others, the evolution of energy cost. The Group has assumed the following gross margin compound annual growth rates for the five year period:

Gross margin Growth	**2016**	**2015**
Greece and Western Europe	2.9% - 25.4%	6.2% - 59.6%
North America	5.6% - 12.4%	12.3% - 18.8%
South Eastern Europe	9.5% - 16.6%	11.6% - 24.5%
Eastern Mediterranean	23.7%	28.2%

Perpetual growth rates:
Factors that have been taken into consideration are estimates from the local Central Banks in the countries where the Group operates relating to the growth of the local economies over the next years along with the co-relation that exists between the growth of the economy and that of the construction sector.

Perpetual Growth rates	**2016**	**2015**
Greece and Western Europe	3%	3%
North America	2% - 4%	3% - 3.5%
South Eastern Europe	2%	2%
Eastern Mediterranean	3.5%	3.5%

Discount rates:
Discount rates represent the current market assessment of the risks specific to each CGU, taking into consideration the time value of money and individual risks of the underlying assets that have not been incorporated in the cash flow estimates. The discount rate calculation is based on the specific circumstances of the Group and its operating segments and is derived from its weighted average cost of capital (WACC). The WACC takes into account both debt and equity. The cost of equity is derived from the expected return on investment by the Group's investors. The cost of debt is based on the interest bearing borrowings the Group is obliged to service. Country-specific risk is incorporated by applying individual beta factors. The beta factors are evaluated annually based on publicly available market data.

Discount rates	**2016**	**2015**
Greece and Western Europe	9.5%	11.6%
North America	4.7% - 5.6%	7.9%
South Eastern Europe	4.8% - 15.4%	6.4%-15.4%
Eastern Mediterranean	17.7%	16.5%

Sensitivity of recoverable amounts

On 31 December 2016, the Group analyzed the sensitivities of the recoverable amounts of each CGU to a reasonable possible change of a key assumption (notably to a change of one point in the discount rate or the perpetual growth rate).

Impairment of Goodwill

In Greece, a significant reduction in demand of construction materials due to the persisting economic recession led to the reduced revenues compared to the last year forecasts. As a result, the Group recorded an impairment loss of €2.5 million (2015: €4.0 million) on the goodwill, based on the respective value in use as calculated using a discount rate of 9.5% (2015: 11.6%).

In South Eastern Europe, the significant decrease of a terminal's commercial viability resulted in the recognition of an impairment loss of €2.8 million. The calculation of value in use was based on a discount rate of 8.2%.