

Cost of Trasformation of Iron Castings

Update: 08.03.2019



The value of the product Foundry casting can be broken down according to the following scheme

A	Value of the casting in €/ton
B	Pig iron and scrap €/ton
C	Alloy elements for cast iron €/t
A-B-C	Value of transformation €/ton
D	Direct transformation input €/ton
A-B-C-D	Value of the activities €/ton

Note

A	Value of the Foundry iron casting
B	Item B is determined by the extra share of raw material
C	Item C applies to special cast iron types and is calculated on the basis of the values of the alloy elements on the international markets.
D	<p>Item D represents the total direct cost of raw materials not considered in B and C, as well as the cost of energy and of the auxiliary materials that are necessary to obtain the foundry casting. Like items B and C, these costs are subject to the market prices variations, which can be positive or negative. The commodities that make up item D - and therefore also the resulting index - depend mainly on the trend of the energy costs.</p> <p>As a matter of fact, along with the energy directly employed, it should also be considered that the cost of ferroalloys incorporates an important share of the electric power cost and that the alloying elements for cores and grounds are mainly obtained from oil product.</p>
A-B-C-D	Item A-B-C-D represents the value of the activities performed by the Foundry and by any external Suppliers. It is mainly made up by the cost of labour, by depreciation and by the remuneration of one's own capital and/or third party's capital. The trend of this item can be approximately index-linked to the Country's general inflation rate.



Index breakdown (direct transformation inputs) Foundries using electrical furnaces

ASSOFOND

Recarburising graphite	2.67
FeSiMg	8.00
Other materials (FeSi)	6.67
Metallic charge excluding pig iron & steel scraps	17.34
Electrical power	29.33
Natural Gas	2.67
Foundry Coke	0.00
Energies	32.00
Filters & exothermic sleeves	8.00
French sand	13.33
Core binders	8.00
Green sand binders	3.47
Other consumables (consumer prices index)	17.86
Auxiliary materials	50.66
Direct transformation inputs	100.00



Index breakdown (direct transformation inputs) Foundries using cupola furnaces

ASSOFOND

Recarburising graphite	2.67
FeSiMg	8.00
Other materials (FeSi)	6.67
Metallic charge excluding pig iron & steel scraps	17.34
Electrical power	15.76
Natural Gas	1.43
Foundry Coke	14.81
Energies	32.00
Filters & exothermic sleeves	8.00
French sand	13.33
Core binders	8.00
Green sand binders	3.47
Other consumables (consumer prices index)	17.86
Auxiliary materials	50.66
Direct transformation inputs	100.00



The following tables can be easily recalculated with different relative weights according to the costs structure of each Foundry and/or by different casting families.

Direct transformation inputs (Year 2017-2016)

	Metallic charge excluding pig iron & steel scraps	Energies Foundries using electrical furnaces	Energies Foundries using cupola furnaces	Auxiliary materials	Index DTI Foundries using electrical furnaces	Index DTI Foundries using cupola furnaces
<i>Weight Annual average 2002</i>	<i>17,34</i>	<i>32,00</i>	<i>32,00</i>	<i>50,66</i>	<i>100,00</i>	<i>100,00</i>
January-16	184,84	251,51	282,92	135,11	180,98	191,03
February-16	184,36	240,56	274,17	134,00	176,83	187,59
March-16	184,21	233,80	270,53	132,92	174,09	185,85
April-16	185,98	229,23	268,08	132,92	172,94	185,37
May-16	187,33	231,02	269,04	132,96	173,77	185,94
June-16	186,92	224,63	264,18	132,57	171,45	184,11
July-16	186,72	219,89	261,63	132,62	169,92	183,28
August-16	186,72	226,13	264,98	133,17	172,20	184,64
September-16	187,69	226,07	264,95	133,56	172,55	184,99
October-16	188,11	228,56	266,29	134,29	173,79	185,86
November-16	190,38	227,57	283,78	136,79	175,13	193,12
December-16	198,08	234,96	287,75	136,93	178,90	195,79
Average 2016	187,61	231,16	271,53	133,99	174,38	187,30
January-17	206,00	241,00	304,73	140,87	184,21	204,60
February-17	205,87	241,01	304,74	141,05	184,27	204,67
March-17	206,54	246,11	307,48	141,05	186,02	205,66
April-17	211,93	245,76	307,29	145,98	189,34	209,03
May-17	213,09	239,12	303,72	147,29	188,08	208,76
June-17	210,97	234,85	293,85	148,33	186,88	205,76
July-17	208,50	232,92	292,81	149,45	186,40	205,57
August-17	206,63	227,76	290,04	149,63	184,51	204,44
September-17	218,01	227,95	286,28	149,50	186,48	205,15
October-17	217,68	229,84	287,29	149,41	186,98	205,37
November-17	216,19	227,21	287,60	149,37	185,86	205,19
December-17	223,82	234,11	291,30	149,88	189,66	207,96
Average 2017	212,10	235,64	296,43	146,82	186,56	206,01
January-18	245,40	238,87	293,86	152,28	196,13	213,73
February-18	245,55	246,61	305,60	151,78	198,39	217,26
March-18	245,76	246,35	305,46	151,87	198,38	217,30
April-18	242,26	248,75	306,75	151,37	198,29	216,85
May-18	236,65	252,43	313,02	149,76	197,68	217,07
June-18	233,16	249,68	311,54	148,98	195,80	215,59
July-18	231,01	247,95	307,75	148,73	194,75	213,89
August-18	230,76	242,11	304,61	148,91	192,93	212,93
September-18	226,90	246,25	306,84	148,69	193,47	212,86
October-18	224,06	252,67	310,29	147,42	194,39	212,83
November-18	224,47	260,24	314,36	147,33	196,84	214,15
December-18	221,42	262,90	315,78	147,29	197,14	214,06
Average 2018	233,95	249,57	307,99	149,53	196,18	214,88

Direct transformation inputs (Year 2002-2018)

	Metallic charge excluding pig iron & steel scraps	Energies Foundries using electrical furnaces	Energies Foundries using cupola furnaces	Auxiliary materials	Index DTI Foundries using electrical furnaces	Index DTI Foundries using cupola furnaces
<i>Weight Annual average 2002</i>	<i>17,34</i>	<i>32,00</i>	<i>32,00</i>	<i>50,66</i>	<i>100,00</i>	<i>100,00</i>
2002	100,00	100,00	-	100,00	100,00	-
2003	105,55	104,03	-	102,58	103,56	-
2004	112,36	103,81	-	104,71	105,75	-
2005	107,95	114,01	-	112,60	112,25	-
2006	111,22	140,89	-	116,07	123,17	-
dic-06	115,37	145,61	135,61	116,28	125,51	122,31
2007	124,12	148,99	174,31	120,33	130,16	138,26
2008	182,78	177,30	288,78	125,53	152,03	187,70
2009	157,77	137,64	204,61	125,47	134,97	156,40
2010	189,92	164,98	229,17	127,31	150,22	170,76
2011	210,10	213,36	293,60	131,06	171,10	196,78
2012	206,63	259,84	312,04	134,39	187,06	203,76
2013	201,20	267,44	307,64	135,64	189,18	202,05
2014	200,05	266,98	296,21	136,03	189,03	198,39
2015	199,64	248,56	284,90	134,13	182,11	193,74
2016	187,61	231,16	271,53	133,99	174,38	187,30
2017	212,10	235,64	296,43	146,82	186,56	206,01
2018	233,95	249,57	307,99	149,53	196,18	214,88

Metallic charge excluding pig iron & steel scraps (Year 2018-2019)

	Recarburising graphite	FeSiMg	Other materials (FeSi)	Metallic charge excluding pig iron & steel scraps
<i>Weight Annual average 2002</i>	<i>2,67</i>	<i>8,00</i>	<i>6,67</i>	<i>17,34</i>
January-18	218,13	234,93	268,87	245,40
February-18	218,13	234,93	269,26	245,55
March-18	218,13	234,93	269,81	245,76
April-18	218,13	234,93	260,70	242,26
May-18	218,13	234,93	246,13	236,65
June-18	218,13	234,93	237,05	233,16
July-18	218,13	234,93	231,47	231,01
August-18	218,13	234,93	230,81	230,76
September-18	218,13	234,93	220,78	226,90
October-18	218,13	234,93	213,40	224,06
November-18	218,13	234,93	214,45	224,47
December-18	218,13	234,93	206,52	221,42
Average 2018	218,13	234,93	239,11	233,95
January-19	218,13	241,98	199,85	222,10
February-19	-	-	-	-
March-19	-	-	-	-
April-19	-	-	-	-
May-19	-	-	-	-
June-19	-	-	-	-
July-19	-	-	-	-
August-19	-	-	-	-
September-19	-	-	-	-
October-19	-	-	-	-
November-19	-	-	-	-
December-19	-	-	-	-
Average 2019	-	-	-	-

Metallic charge excluding pig iron & steel scraps (Year 2017-2016)

	Recarburising graphite	FeSiMg	Other materials (FeSi)	Metallic charge excluding pig iron & steel scraps
<i>Weight Annual average 2002</i>	<i>2,67</i>	<i>8,00</i>	<i>6,67</i>	<i>17,34</i>
January-16	175,02	219,31	147,44	184,84
February-16	175,02	219,31	146,19	184,36
March-16	175,02	219,31	145,79	184,21
April-16	175,02	219,31	150,38	185,98
May-16	175,02	219,31	153,91	187,33
June-16	175,02	219,31	152,84	186,92
July-16	175,02	219,31	152,30	186,72
August-16	175,02	219,31	152,30	186,72
September-16	175,02	219,31	154,83	187,69
October-16	175,02	219,31	155,91	188,11
November-16	175,02	219,31	161,81	190,38
December-16	175,02	219,31	181,84	198,08
Average 2016	175,02	219,31	154,63	187,61
January-17	180,27	225,89	192,43	206,00
February-17	180,27	225,89	192,09	205,87
March-17	180,27	225,89	193,83	206,54
April-17	180,27	225,89	207,84	211,93
May-17	180,27	225,89	210,87	213,09
June-17	180,27	225,89	205,35	210,97
July-17	180,27	225,89	198,94	208,50
August-17	180,27	225,89	194,07	206,63
September-17	180,27	225,89	223,67	218,01
October-17	180,27	225,89	222,80	217,68
November-17	180,27	225,89	218,93	216,19
December-17	180,27	225,89	238,76	223,82
Average 2017	180,27	225,89	208,30	212,10

Metallic charge excluding pig iron & steel scraps (Year 2002-2018)

	Recarburising graphite	FeSiMg	Other materials (FeSi)	Metallic charge excluding pig iron & steel scraps
<i>Weight Annual average 2002</i>	<i>2,67</i>	<i>8,00</i>	<i>6,67</i>	<i>17,34</i>
2002	100,00	100,00	100,00	100,00
2003	100,05	100,12	114,25	105,55
2004	100,15	104,97	126,10	112,36
2005	95,82	113,14	106,57	107,95
2006	95,06	113,19	115,34	111,22
2007	97,45	113,19	147,91	124,12
2008	122,04	162,52	231,39	182,78
2009	136,77	167,69	154,27	157,77
2010	149,60	180,92	216,86	189,92
2011	164,03	220,10	216,54	210,10
2012	180,43	233,30	185,12	206,63
2013	180,43	226,10	179,64	201,20
2014	175,02	219,31	186,96	200,05
2015	175,02	219,31	185,89	199,64
2016	175,02	219,31	154,63	187,61
2017	180,27	225,89	208,30	212,10
2018	218,13	234,93	239,11	233,95

Energies (Year 2018-2019)

	Electrical power	Natural Gas	Foundry Coke	Energies Foundries using electrical furnaces	Energies Foundries using cupola furnaces
<i>Electrical furnace - weight Annual average = 2002</i>	29,33	2,67	0,00	32,00	
<i>Cupolal furnace - weight Annual average = 2002</i>	15,76	1,43	14,81		32,00
Average	100,00	100,00	100,00	100,00	100,00
January-18	244,29	179,33	357,72	238,87	293,86
February-18	252,75	179,10	374,11	246,61	305,60
March-18	253,14	171,81	374,11	246,35	305,46
April-18	255,72	172,20	374,11	248,75	306,75
May-18	258,82	182,24	383,38	252,43	313,02
June-18	255,00	191,17	383,38	249,68	311,54
July-18	252,57	197,17	377,20	247,95	307,75
August-18	245,72	202,52	377,20	242,11	304,61
September-18	249,04	215,63	377,20	246,25	306,84
October-18	255,06	226,44	377,20	252,67	310,29
November-18	263,61	223,27	377,20	260,24	314,36
December-18	267,67	210,49	377,20	262,90	315,78
Average 2018	254,45	195,95	375,83	249,57	307,99
January-19	270,12	202,09	391,11	264,45	323,05
February-19	-	-	-	-	-
March-19	-	-	-	-	-
April-19	-	-	-	-	-
May-19	-	-	-	-	-
June-19	-	-	-	-	-
July-19	-	-	-	-	-
August-19	-	-	-	-	-
September-19	-	-	-	-	-
October-19	-	-	-	-	-
November-19	-	-	-	-	-
December-19	-	-	-	-	-
Average 2019	-	-	-	-	-

Energies (Year 2017-2016)

	Electrical power	Natural Gas	Foundry Coke	Energies Foundries using electrical furnaces	Energies Foundries using cupola furnaces
<i>Electrical furnace - weight Annual average = 2002</i>	<i>29,33</i>	<i>2,67</i>	<i>0,00</i>	<i>32,00</i>	
<i>Cupola furnace - weight Annual average = 2002</i>	<i>15,76</i>	<i>1,43</i>	<i>14,81</i>		<i>32,00</i>
<i>Average</i>	<i>100,00</i>	<i>100,00</i>	<i>100,00</i>	<i>100,00</i>	<i>100,00</i>
January-16	256,67	194,85	319,38	251,51	282,92
February-16	246,23	178,36	313,20	240,56	274,17
March-16	241,30	151,31	313,20	233,80	270,53
April-16	236,89	145,04	313,20	229,23	268,08
May-16	238,83	145,26	313,20	231,02	269,04
June-16	232,57	137,40	310,11	224,63	264,18
July-16	226,82	143,77	310,11	219,89	261,63
August-16	233,66	143,42	310,11	226,13	264,98
September-16	233,69	142,35	310,11	226,07	264,95
October-16	236,05	146,26	310,11	228,56	266,29
November-16	234,13	155,43	349,06	227,57	283,78
December-16	241,58	162,18	349,06	234,96	287,75
Average 2016	238,20	153,80	318,40	231,16	271,53
January-17	247,53	169,29	378,75	241,00	304,73
February-17	247,38	171,07	378,75	241,01	304,74
March-17	253,14	168,93	378,75	246,11	307,48
April-17	253,70	158,51	378,75	245,76	307,29
May-17	246,78	154,94	378,75	239,12	303,72
June-17	242,06	155,70	362,36	234,85	293,85
July-17	239,77	157,73	362,36	232,92	292,81
August-17	234,17	157,41	362,36	227,76	290,04
September-17	234,18	159,51	354,01	227,95	286,28
October-17	235,50	167,60	354,01	229,84	287,29
November-17	232,13	173,17	357,72	227,21	287,60
December-17	239,16	178,66	357,72	234,11	291,30
Average 2017	242,12	164,38	367,02	235,64	296,43

Energies (Year 2002-2018)

	Energia Elettrica	Metano	Coke Fonderia	Consumi energetici Fonderia con forno elettrico	Consumi energetici Fonderia con forno cubilotto
<i>forno elettrico Pesì Anno base = 2002</i>	<i>29,33</i>	<i>2,67</i>	<i>0,00</i>	<i>32,00</i>	<i>-</i>
<i>forno cubilotto Pesì Anno base = 2002</i>	<i>15,76</i>	<i>1,43</i>	<i>14,81</i>	<i>-</i>	<i>32,00</i>
<i>Media</i>	<i>100,00</i>	<i>100,00</i>	<i>0,00</i>	<i>100,00</i>	<i>100,00</i>
2002	100,00	100,00	-	100,00	-
2003	104,09	103,32	-	104,03	-
2004	104,03	101,45	-	103,81	-
2005	114,22	111,78	-	114,01	-
2006	141,72	131,82	-	140,89	-
dicembre-06	142,81	176,27	124,00	145,61	135,61
2007	147,10	169,70	203,72	148,99	174,31
2008	174,57	207,36	418,24	177,30	288,78
2009	133,88	178,96	282,38	137,64	204,61
2010	163,63	179,78	303,72	164,98	229,17
2011	212,47	223,17	386,78	213,36	293,60
2012	259,23	266,46	372,66	259,84	312,04
2013	267,49	266,97	354,32	267,44	307,64
2014	268,34	251,96	330,15	266,98	296,21
2015	252,62	203,92	327,11	248,56	284,90
2016	238,20	153,80	318,40	231,16	271,53
2017	242,12	164,38	367,02	235,64	296,43
2018	254,45	195,95	375,83	249,57	307,99

Auxiliary materials (Year 2017-2016)

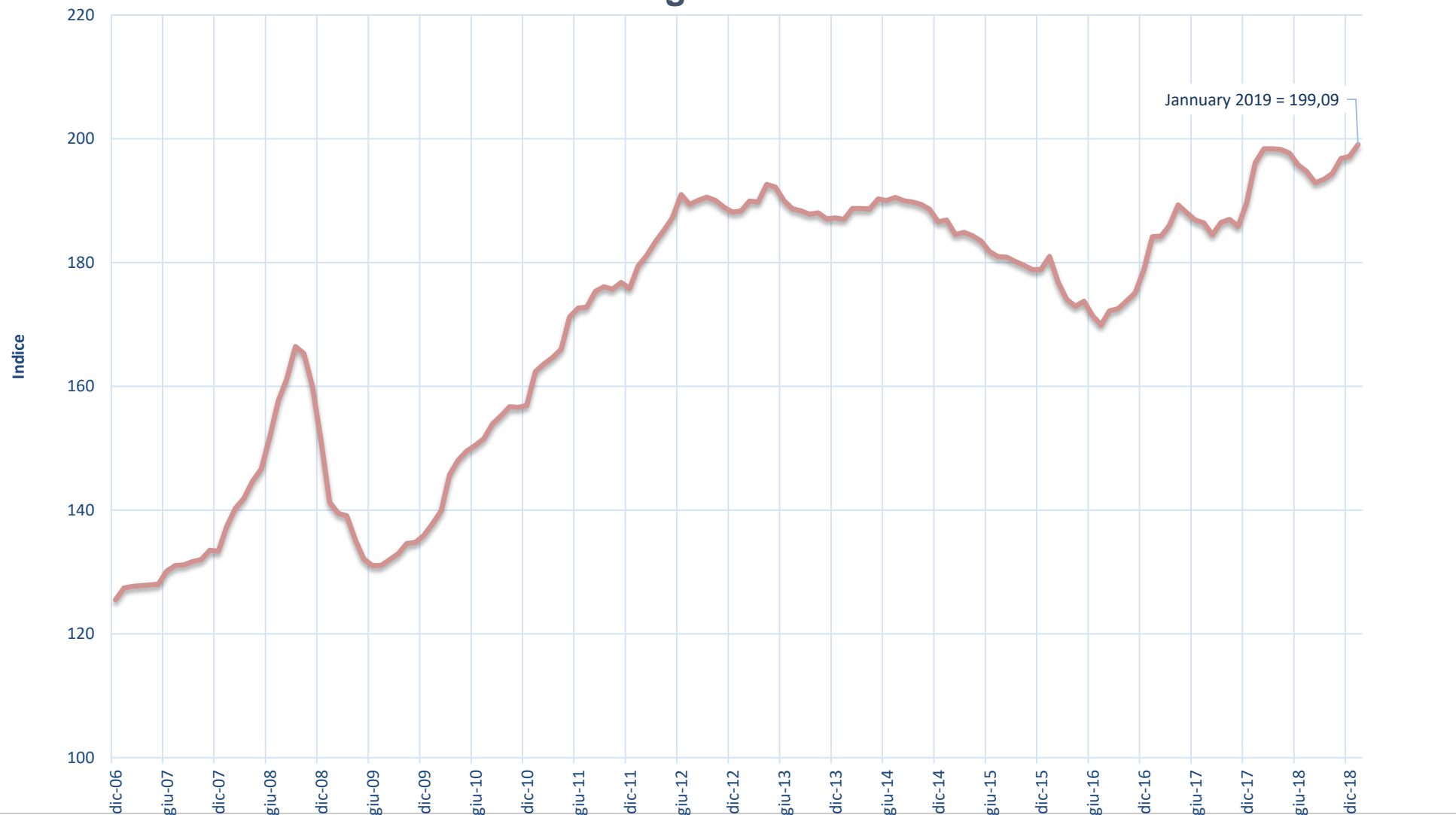
	Filters & exothermic sleeves	French sand	Core binders	Green sand binders	Other consumables (consumer prices index)	Auxiliary materials
<i>Weight Annual average 2002</i>	8,00	13,33	8,00	3,47	17,86	50,66
<i>Average</i>	100,00	100,00	100,00	100,00	100,00	100,00
January-16	122,79	123,86	162,21	199,82	124,33	135,11
February-16	122,79	123,86	155,72	199,82	124,08	134,00
March-16	122,79	123,86	151,05	199,82	123,10	132,92
April-16	122,79	123,86	151,05	199,82	123,10	132,92
May-16	122,79	123,86	151,05	199,82	123,23	132,96
June-16	122,79	123,86	148,03	199,82	123,47	132,57
July-16	122,79	123,86	148,03	199,82	123,60	132,62
August-16	122,79	123,86	150,99	199,82	123,84	133,17
September-16	122,79	123,86	154,01	199,82	123,60	133,56
October-16	122,79	123,86	158,63	199,82	123,60	134,29
November-16	122,79	123,86	174,49	199,82	123,60	136,79
December-16	122,79	123,86	174,49	199,82	123,97	136,93
Average 2016	122,79	123,86	156,65	199,82	123,63	133,99
January-17	122,79	126,33	190,20	209,81	124,34	140,87
February-17	122,79	126,33	190,20	209,81	124,83	141,05
March-17	122,79	126,33	190,20	209,81	124,83	141,05
April-17	122,79	126,33	220,63	209,81	125,20	145,98
May-17	122,79	126,33	229,45	209,81	124,96	147,29
June-17	122,79	126,33	236,34	209,81	124,83	148,33
July-17	122,79	126,33	243,43	209,81	124,83	149,45
August-17	122,79	126,33	243,43	209,81	125,33	149,63
September-17	122,79	126,33	243,43	209,81	124,96	149,50
October-17	122,79	126,33	243,43	209,81	124,71	149,41
November-17	122,79	126,33	243,43	209,81	124,59	149,37
December-17	122,79	126,33	245,86	209,81	124,96	149,88
Average 2017	122,79	126,33	226,67	209,81	124,86	146,82

Auxiliary materials (Year 2002-2018)

	Filters & exothermic sleeves	French sand	Core binders	Green sand binders	Other consumables (consumer prices index)	Auxiliary materials index
<i>Weight Annual average = 2002</i>	8,00	13,33	8,00	3,47	17,86	50,66
<i>Average</i>	100,00	100,00	100,00	100,00	100,00	100,00
2002	100,00	100,00	100,00	100,00	100,00	100,00
2003	102,00	102,63	103,00	103,56	102,42	102,58
2004	102,00	103,74	108,15	108,60	104,35	104,71
2005	103,53	107,46	135,97	132,43	106,19	112,60
2006	106,63	111,99	142,09	133,53	108,31	116,07
2007	113,03	115,35	150,62	138,35	110,24	120,33
2008	117,55	119,67	154,68	159,47	113,84	125,53
2009	117,55	119,67	149,86	165,72	114,61	125,47
2010	114,03	119,67	161,05	165,72	116,39	127,31
2011	117,45	119,67	169,12	177,32	119,62	131,06
2012	120,97	119,67	178,57	177,85	123,16	134,39
2013	122,79	123,86	174,45	177,85	124,61	135,64
2014	122,79	123,86	176,33	177,85	124,87	136,03
2015	122,79	123,86	161,27	186,00	124,66	134,13
2016	122,79	123,86	156,65	199,82	123,63	133,99
2017	122,79	126,33	226,67	209,81	124,86	146,82
2018	126,47	130,12	223,65	226,59	126,18	149,53

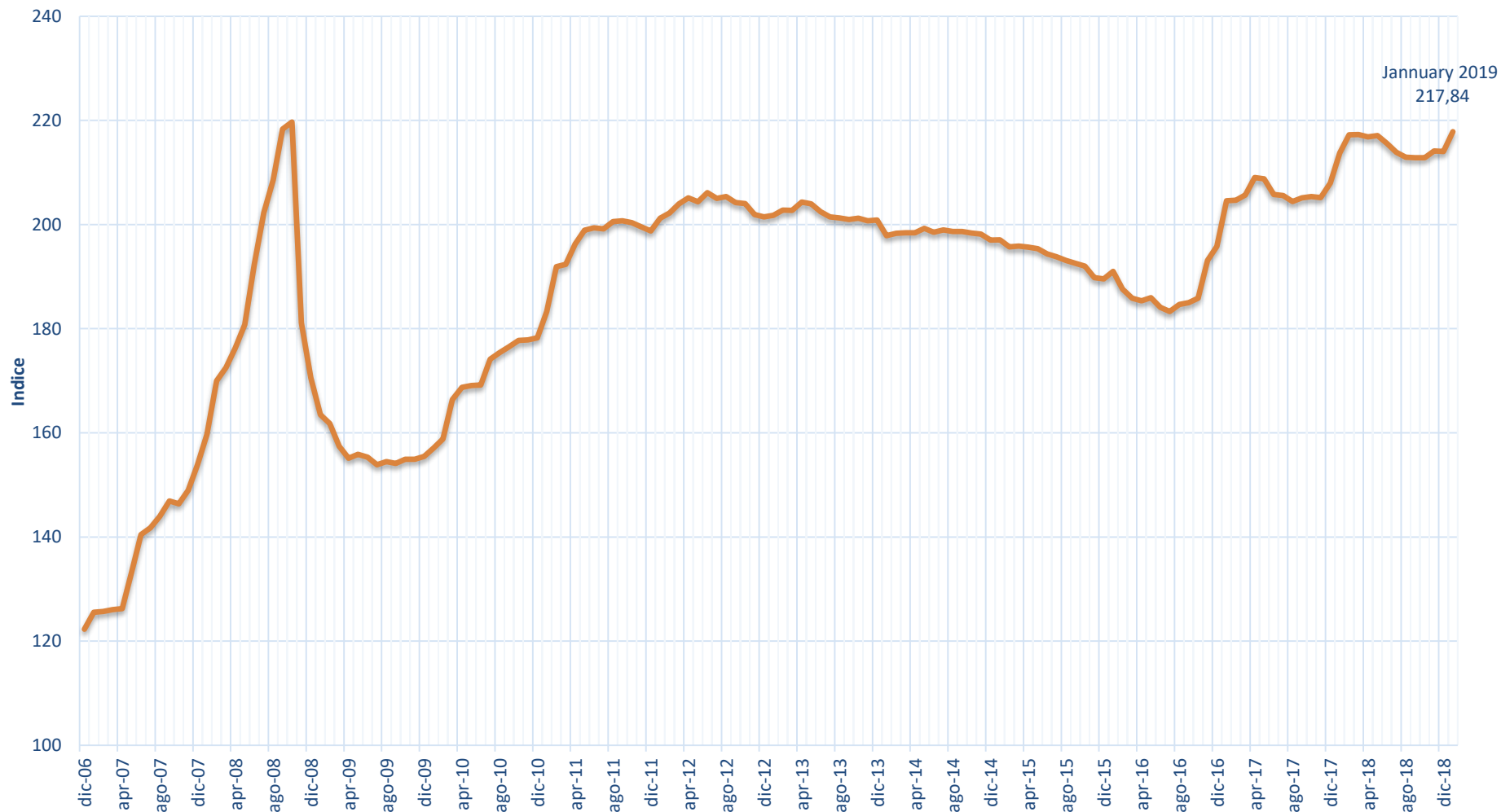
Index Direct Transformation Inputs

Foundries using electrical furnaces



Index Direct Transformation Inputs

Foundries using cupola furnaces





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