

## **APÉNDICE: 7.2 CÁLCULO MECÁNICO**



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## 1. OBJETO Y ALCANCE DE LA MODIFICACIÓN

El presente documento tiene por objeto realizar los cálculos mecánicos de las conducciones tras la Modificación del trazado entre los P.K.'s 1+780 y 4+000 del Tramo 18-19, en el entorno de la propiedad de la mercantil URZANTE, S.L.

A la vista del trazado proyectado se considera que los cálculos realizados son válidos y no se modifican, si bien se modifica la tabla del apartado 2.2

El resultado de la asignación de espesores a cada tramo se resume a continuación:

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Nº tuberías	DN tuberías (mm)	DN ext (mm)	DN int(mm)	Acero tipo S-	espesor adoptado (mm)
CN-T12	Conex	0,000	0,000	2	2.000	2.032	2.002	275	15,00
CN-T12	CN-T11	1.569,00	1.705,82	2	2.000	2.032	2.002	275	15,00
CN-T12	CN-T11	1.570,00	1.706,82	2	2.000	2.032	2.004	275	14,00
CN-T12	CN-T11	5.471,00	5.607,82	2	2.000	2.032	2.004	275	14,00
CN-T12	CN-T11	5.472,00	5.608,82	2	2.000	2.032	2.004	355	14,00
CN-T12	CN-T11	7.397,00	7.533,82	2	2.000	2.032	2.004	355	14,00
CN-T12	CN-T11	7.398,00	7.534,82	2	2.000	2.032	2.002	355	15,00
CN-T12	CN-T11	7.507,00	7.643,82	2	2.000	2.032	2.002	355	15,00
CN-T12	CN-T11	7.508,00	7.644,82	2	2.000	2.032	2.004	355	14,00
CN-T12	CN-T11	7.911,00	8.047,82	2	2.000	2.032	2.004	355	14,00
CN-T12	CN-T11	7.912,00	8.048,82	2	2.000	2.032	2.004	275	14,00
CN-T12	CN-T11	14.290,00	14.426,82	2	2.000	2.032	2.004	275	14,00
CN-T12	T11-T12	0,00	14.426,82	2	1.800	1.829	1.806	275	11,50
CN-T12	T11-T12	10.965,00	25.391,82	2	1.800	1.829	1.806	275	11,50
CN-T12	T11-T12	10.966,00	25.392,82	2	1.800	1.829	1.801	275	14,00
CN-T12	T11-T12	11.015,00	25.441,82	2	1.800	1.829	1.801	275	14,00
CN-T12	T11-T12	11.016,00	25.442,82	2	1.800	1.829	1.806	275	11,50
CN-T12	T11-T12	11.840,00	26.266,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T12-T13	0,00	26.266,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T12-T13	960,00	27.226,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T12-T13	961,00	27.227,82	2	1.800	1.829	1.801	275	14,00
T12-DC	T12-T13	975,00	27.241,82	2	1.800	1.829	1.801	275	14,00
T12-DC	T12-T13	976,00	27.242,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T12-T13	2.930,00	29.196,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T12-T13	2.931,00	29.197,82	2	1.800	1.829	1.799	275	15,00
T12-DC	T12-T13	3.282,00	29.548,82	2	1.800	1.829	1.799	275	15,00
T12-DC	T12-T13	3.283,00	29.549,82	2	1.800	1.829	1.804	275	12,50
T12-DC	T12-T13	3.829,00	30.095,82	2	1.800	1.829	1.804	275	12,50
T12-DC	T12-T13	3.830,00	30.096,82	2	1.800	1.829	1.804	355	12,50
T12-DC	T12-T13	4.676,00	30.942,82	2	1.800	1.829	1.804	355	12,50
T12-DC	T12-T13	4.677,00	30.943,82	2	1.800	1.829	1.803	355	13,00
T12-DC	T12-T13	8.864,00	35.130,82	2	1.800	1.829	1.803	355	13,00

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Nº tuberías	DN tuberías (mm)	DN ext (mm)	DN int(mm)	Acero tipo S-	espesor adoptado (mm)
T12-DC	T12-T13	8.865,00	35.131,82	2	1.800	1.829	1.801	355	14,00
T12-DC	T12-T13	9.908,00	36.174,82	2	1.800	1.829	1.801	355	14,00
T12-DC	T12-T13	9.909,00	36.175,82	2	1.800	1.829	1.806	355	11,50
T12-DC	T12-T13	12.500,00	38.766,82	2	1.800	1.829	1.806	355	11,50
T12-DC	T13-T13B	0,00	38.766,82	2	1.800	1.829	1.806	355	11,50
T12-DC	T13-T13B	881,00	39.647,82	2	1.800	1.829	1.806	355	11,50
T12-DC	T13-T13B	882,00	39.648,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T13-T13B	3.640,00	42.406,82	2	1.800	1.829	1.806	275	11,50
T12-DC	T13B-BT	0,00	42.406,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	291,00	42.697,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	292,00	42.698,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	1.506,00	43.912,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	1.507,00	43.913,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	2.018,00	44.424,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	2.019,00	44.425,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	3.020,00	45.426,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	3.021,00	45.427,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	4.179,00	46.585,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	4.180,00	46.586,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	5.346,00	47.752,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	5.347,00	47.753,82	2	1.600	1.626	1.594	275	16,00
T12-DC	T13B-BT	5.393,00	47.799,82	2	1.600	1.626	1.594	275	16,00
T12-DC	T13B-BT	5.393,98	47.800,81	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	5.875,00	48.281,82	2	1.600	1.626	1.601	275	12,50
T12-DC	T13B-BT	5.876,00	48.282,82	2	1.600	1.626	1.606	275	10,00
T12-DC	T13B-BT	6.927,73	49.334,55	2	1.600	1.626	1.606	275	10,00
T12-DC	BT-DC	0,00	49.334,55	2	1.900	1.930	1.904	275	13,00
T12-DC	BT-DC	1.644,48	50.979,03	2	1.900	1.930	1.904	275	13,00
DC-T21/T14	DC-T17	0,00	50.979,03	2	1.800	1.829	1.801	275	14,00
DC-T21/T14	DC-T17	106,00	51.085,03	2	1.800	1.829	1.801	275	14,00
DC-T21/T14	DC-T17	107,00	51.086,03	2	1.800	1.829	1.806	275	11,50
DC-T21/T14	DC-T17	2.730,00	53.709,03	2	1.800	1.829	1.806	275	11,50
DC-T21/T14	T17-T18	0,00	53.709,03	2	1.600	1.626	1.606	275	10,00
DC-T21/T14	T17-T18	2.319,00	56.028,03	2	1.600	1.626	1.606	275	10,00
DC-T21/T14	T17-T18	2.320,00	56.029,03	2	1.600	1.626	1.601	275	12,50
DC-T21/T14	T17-T18	2.353,00	56.062,03	2	1.600	1.626	1.601	275	12,50
DC-T21/T14	T17-T18	2.354,00	56.063,03	2	1.600	1.626	1.606	275	10,00
DC-T21/T14	T17-T18	3.230,00	56.939,03	2	1.600	1.626	1.606	275	10,00
DC-T21/T14	T18-T19	0,00	56.939,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	2.511,00	59.450,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	2.512,00	59.451,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	2.546,00	59.485,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	2.547,00	59.486,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	2.574,00	59.513,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	2.575,00	59.514,03	1	1.800	1.829	1.804	275	12,50

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Nº tuberías	DN tuberías (mm)	DN ext (mm)	DN int(mm)	Acero tipo S-	espesor adoptado (mm)
DC-T21/T14	T18-T19	2.599,00	59.538,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	2.600,00	59.539,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	3.225,00	60.164,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	3.226,00	60.165,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	3.277,00	60.216,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	3.278,00	60.217,03	1	1.800	1.829	1.793	275	18,00
DC-T21/T14	T18-T19	3.472,00	60.411,03	1	1.800	1.829	1.793	275	18,00
DC-T21/T14	T18-T19	3.473,00	60.412,03	1	1.800	1.829	1.799	275	15,00
DC-T21/T14	T18-T19	3.479,00	60.418,03	1	1.800	1.829	1.799	275	15,00
DC-T21/T14	T18-T19	3.480,00	60.419,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	3.496,00	60.435,03	1	1.800	1.829	1.801	275	14,00
DC-T21/T14	T18-T19	3.497,00	60.436,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	5.047,00	61.986,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	5.048,00	61.987,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	5.064,00	62.003,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	5.065,00	62.004,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	5.435,00	62.374,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	5.436,00	62.375,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	5.451,00	62.390,03	1	1.800	1.829	1.804	275	12,50
DC-T21/T14	T18-T19	5.452,00	62.391,03	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T18-T19	5.765,85	62.704,88	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T19-T20	0,00	62.704,88	1	1.500	1.524	1.503	275	10,50
DC-T21/T14	T19-T20	450,00	63.154,88	1	1.500	1.524	1.503	275	10,50
DC-T21/T14	T19-T20	451,00	63.155,88	1	1.500	1.524	1.492	275	16,00
DC-T21/T14	T19-T20	918,00	63.622,88	1	1.500	1.524	1.492	275	16,00
DC-T21/T14	T19-T20	919,00	63.623,88	1	1.500	1.524	1.505	275	9,50
DC-T21/T14	T19-T20	2.440,00	65.144,88	1	1.500	1.524	1.505	275	9,50
DC-T21/T14	T20-T21	0,00	65.144,88	1	1.300	1.321	1.305	275	8,00
DC-T21/T14	T20-T21	1.655,00	66.799,88	1	1.300	1.321	1.305	275	8,00
DC-T21/T14	T20-T21	1.656,00	66.800,88	1	1.300	1.321	1.301	275	10,00
DC-T21/T14	T20-T21	2.055,00	67.199,88	1	1.300	1.321	1.301	275	10,00
DC-T21/T14	DC-T16	0,00	0,00	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	DC-T16	572,00	572,00	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	DC-T16	573,00	573,00	1	1.800	1.829	1.793	275	18,00
DC-T21/T14	DC-T16	883,00	883,00	1	1.800	1.829	1.793	275	18,00
DC-T21/T14	DC-T16	884,00	884,00	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	DC-T16	1.150,00	1.150,00	1	1.800	1.829	1.806	275	11,50
DC-T21/T14	T16-T14	0,00	1.150,00	1	1.600	1.626	1.606	275	10,00
DC-T21/T14	T16-T14	3.048,00	4.198,00	1	1.600	1.626	1.606	275	10,00
DC-T21/T14	T16-T14	3.049,00	4.199,00	1	1.600	1.626	1.601	275	12,50
DC-T21/T14	T16-T14	3.241,37	4.391,37	1	1.600	1.626	1.601	275	12,50