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## **The articulation of a "New neolithic"**

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## Appendix 3. The use of <sup>14</sup>C dates

This intrasite study encompasses a large number of <sup>14</sup>C dates, which were originally presented in different ways: as dates BP, BC and cal. BC. In this study, <sup>14</sup>C dates are presented as calibrated years Before Christ (BC). This required a standardisation of all available dates. First of all, all <sup>14</sup>C dates (BP) were calibrated using the cal20 software of the Groningen University *Centrum voor Isotopen Onderzoek*. A second standardisation is the representation of all calibrated ages as 2σ ranges. This provides a 95% certainty that the range

covers the actual date of the sample. Though the use of 1σ ranges allows a more sharply-defined dating of archaeological phenomena, I consider a 67% certainty to be insufficient. Thirdly, in some studies a settlement phase or sedimentation phase is dated on the basis of a combination of interrelated <sup>14</sup>C dates. Uncalibrated <sup>14</sup>C phases are calibrated using the figures of Pearson *et al.* 1986. Finally, all dates are rounded off to 10 year intervals.

### List of <sup>14</sup>C dates cited in this study.

Site	Sample number	Material	Before Present	Calibrated 2σ range	References
Swifterbant					
S2	GrN 5443	Charcoal	5300 ± 40	4230-3996	Van der Waals 1977
	GrN 5606	Collagen	5540 ± 65	4504-4250	Van der Waals 1977
S3	GrN 6896	Charcoal	5230 ± 40	4220-3966	Van der Waals 1977
	GrN 7042	Charcoal	5295 ± 40	4228-3996	Van der Waals 1977
	GrN 7044	Wood	5310 ± 50	4310-3992	Van der Waals 1977
	GrN 7364	Charcoal	5340 ± 55	4328-4000	Van der Waals 1977
	GrN 7043	Charcoal	5375 ± 40	4334-4050	Van der Waals 1977
S11	GrN 7214	?	6285 ± 40	5285-5080	Whallon/Price 1976
	GrN 7215	?	6330 ± 45	5424-5144	Whallon/Price 1976
	UTC 3482-2	Vegetable temper	5670 ± 90	4718-4346	Hogestijn/Peeters 1996
	UTC 6864-2	Vegetable temper	6180 ± 160	5430-4730	Hogestijn/Peeters 1996
	UTC 6864-3	Vegetable temper	6150 ± 90	5262-4852	Hogestijn/Peeters 1996
	UTC 6864-4	Vegetable temper	5900 ± 90	4964-4532	Hogestijn/Peeters 1996
	UTC 7060-1	Vegetable temper	6030 ± 100	5210-4720	Hogestijn/Peeters 1996
	UTC 7060-2	Vegetable temper	6210 ± 80	5276-4942	Hogestijn/Peeters 1996
	UTC 7060-3	Vegetable temper	5990 ± 110	5210-4600	Hogestijn/Peeters 1996
	UTC 7089-2	Vegetable temper	6310 ± 110	5440-4970	Hogestijn/Peeters 1996
UTC 7089-3	Vegetable temper	6380 ± 70	5438-5150	Hogestijn/Peeters 1996	
S21	GrN 6708	Charcoal	6670 ± 35	5596-5482	De Roever 1976; 1979; Price 1981a
	GrN 6709	Charcoal	7775 ± 40	6606-6470	De Roever 1976; 1979; Price 1981a
S22	GrN 6710	Charcoal	6875 ± 45	5788-5610	De Roever 1976; 1979
S23	GrN 8248	Charcoal	6240 ± 50	5266-5066	Price 1981a; Deckers 1982
S61	GrN 10355	?	5300 ± 140	4450-3800	Deckers 1982
	GrN 10356	?	5510 ± 70	4494-3800	Deckers 1982
	GrN 10357	?	6235 ± 50	5266-5064	Deckers 1982
Brandwijk					
L30	GrN 19073	Charcoal	5670 ± 45	4668-4364	–
L50 base	GrN 19332	Charcoal	5305 ± 25	4228-4008	–
L50	GrN 18084	Charcoal	5220 ± 35	4218-3964	–
	GrN 18085	Charcoal	5200 ± 40	4218-3948	–
	GrN 19075	Charcoal	5050 ± 45	3958-3718	–
L50 top	GrN 19333	Charcoal	5140 ± 35	4030-3808	–
L60	GrN 19331	Wood	5160 ± 20	3987-3952	–
	GrN 19077	Charcoal	5085 ± 40	3964-3794	–
L70	GrN 19680	Charcoal	4880 ± 35	3762-3546	–

Site	Sample number	Material	Before Present	Calibrated 2 $\sigma$ range	References
Reduced calendar age ranges:					
	L30			4610-4550	–
	L50 base			4220-4100	–
	L60			3940-3820	–
	L70			3700-3630	–
Hazendonk					
Hazendonk 1	GrN 8241	Peat	5385 $\pm$ 45	4340-4050	–
	GrN 8240	Peat	5330 $\pm$ 35	4310-4040	–
	GrN 9196	Charcoal	5265 $\pm$ 60	4230-3970	Verbruggen 1992
	GrN 8331	Charcoal	5165 $\pm$ 30	4036-3820	Verbruggen 1992
Hazendonk 2	GrN 8237	Charcoal	5090 $\pm$ 40	3966-3796	Verbruggen 1992
	GrN 8330	Charcoal	5020 $\pm$ 30	3943-3712	Verbruggen 1992
	GrN 8349	Peat	4995 $\pm$ 35	3934-3700	–
	GrN 9195	Charred wood	4990 $\pm$ 35	3932-3700	–
Hazendonk 3	GrN 8242	Peat	5080 $\pm$ 70	3990-3710	–
	GrN 9193	Charcoal	4810 $\pm$ 35	3658-3390	Verbruggen 1992
	GrN 8350	Peat	4755 $\pm$ 35	3636-3380	–
Vlaardingen 1a	GrN 8243	Peat	4720 $\pm$ 70	3640-3360	–
	GrN 8235	Wood	4535 $\pm$ 35	3354-3100	–
Vlaardingen 1b	GrN 9136	Charcoal	4445 $\pm$ 35	3308-2924	Verbruggen 1992
	GrN 9190	Wood	4400 $\pm$ 60	3328-2890	–
Reduced calendar age ranges:					
	Hazendonk 1			4020-3960	Verbruggen 1992
	Hazendonk 2			3910-3790	Verbruggen 1992
	Hazendonk 3			3670-3610	Verbruggen 1992
	Vlaardingen 1b			3260-2960	Verbruggen 1992
Bronneger					
	OxA 2908	Charred food remains	5890 $\pm$ 90	4948-4532	Hedges <i>et al.</i> 1992
	OxA 2909	Deer antler	5720 $\pm$ 90	4772-4362	Hedges <i>et al.</i> 1992
	OxA 2910	Deer antler	5970 $\pm$ 90	5196-4612	Hedges <i>et al.</i> 1992
Hamburg-Boberg					
15 Ost	OxA 4806	Charred food remains	5310 $\pm$ 55	4316-3992	Hedges <i>et al.</i> 1995
20	OxA 4804	Charred food remains	5360 $\pm$ 55	4334-4042	Hedges <i>et al.</i> 1995
	OxA 4805	Charred food remains	5270 $\pm$ 60	4232-3970	Hedges <i>et al.</i> 1995
	OxA 5117	Charred food remains	4745 $\pm$ 60	3642-3372	Hedges <i>et al.</i> 1996
	OxA 5119	Bone	3780 $\pm$ 50	2396-2034	Hedges <i>et al.</i> 1996
	OxA 5118	Antler	3595 $\pm$ 50	2124-2034	Hedges <i>et al.</i> 1996