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NB

**ENERGY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

NB/T 20358.14-2021

**Budget quotas of nuclear power plant construction project
works - Part 14: Manufacture of module and containment vessel**

核电厂建设工程预算定额 第14部分：模块及钢制安全壳制作

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Table of Contents

1 Scope	1
2 Explanation	1
Chapter 1 Manufacture of Structural Modules	3
3 Manufacture of Structural Modules	5
3.1 Explanation	5
3.2 Rules for Calculating Quantities of Works	6
Quota Nos. 15-1-1 to 15-1-3 CA Floor Slab Modules	7
Quota Nos. 15-1-4 and 15-1-5 CA Wall Modules	10

Foreword

This document was issued on 7 January 2021 by the National Energy Administration of the PRC and takes effect on 1 July 2021.

It is a NB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 01.040.27, Chinese classification F 02.

This document has been drafted in accordance with the rules given in GB/T 1.1-2020, Guidelines for standardization work - Part 1: Structure and drafting rules for standardizing documents.

This document is Part 14 of NB/T 20358, Budget quotas of nuclear power plant construction project works. The following parts of NB/T 20358 have already been issued: Part 1: Nuclear island civil works; Part 2: Nuclear island architectural finishing works; Part 3: Nuclear island steel structure works; Part 4: Nuclear island mechanical equipment installation works; Part 5: Nuclear island piping installation works; Part 6: Nuclear island ventilation and air conditioning works; Part 7: Nuclear island electrical equipment installation works; Part 8: Nuclear island automation and instrumentation installation works; Part 9: Nuclear island communication equipment installation works; Part 10: Nuclear island sand blasting, anti-corrosion and thermal insulation works; Part 11: Conventional island civil works; Part 12: Conventional island thermal equipment installation works; Part 13: Conventional island electrical equipment installation works; Part 14: Manufacture of modules and steel containment vessel; Part 15: Pre-assembly and installation of modules and steel containment vessel.

This document was proposed by the Nuclear Power Standardization Technical Committee

of the energy industry.

This document is under the jurisdiction of the Nuclear Industry Standardization Research Institute.

The main drafting organizations of this document are: State Nuclear Power Technology Corporation Ltd., Shanghai Nuclear Engineering Research and Design Institute, Electric Power Planning and Engineering Institute, Shandong Nuclear Power Equipment Manufacturing Co., Ltd., China Energy Engineering Group Zhejiang Thermal Power Construction Co., Ltd., State Nuclear Power Engineering Company Ltd., China Nuclear Power Engineering Co., Ltd., and CGN Engineering Co., Ltd.

The document also names sixteen principal drafters individually in the Chinese original.

Quota Nos. 15-1-1 to 15-1-3 - Manufacture of CA Floor Slab Modules

Work content: material picking and issue, transplanting of identification marks, cutting, bevel machining (bending), assembly, welding, shear stud welding, drilling, reinforcing bar processing, assembly of reinforcing bars with standard parts, flaw detection, sand blasting, painting, pickling and packaging of the finished product.

Unit of measurement: t. The three columns of the table are quota No. 15-1-1, CA floor slab module in carbon steel with ribs; quota No. 15-1-2, CA floor slab module in carbon steel without ribs; and quota No. 15-1-3, CA floor slab module in stainless steel.

Base price per tonne: 30 620.15 yuan for quota No. 15-1-1; 27 306.71 yuan for quota No. 15-1-2; 65 231.45 yuan for quota No. 15-1-3.

Of which labour cost: 5 989.21 yuan, 5 000.55 yuan and 6 717.24 yuan respectively.

Of which material cost: 13 915.78 yuan, 14 111.56 yuan and 46 889.46 yuan respectively.

Of which machinery cost: 10 715.16 yuan, 8 194.60 yuan and 11 624.75 yuan respectively.

Labour: composite work-days for module manufacture, at a unit price of 135.00 yuan per work-day, 44.365, 37.041 and 49.757 work-days per tonne respectively.

Priced materials, stainless steel plate A240-S32101, unit price 25 641.03 yuan per tonne: 1.050 t is consumed by the stainless steel quota only.

Stainless steel equal angle, unit price 25 641.03 yuan per tonne: 0.010 t, stainless steel quota only.

Channel steel of section 18 and above, unit price 2.86 yuan per kg: 145.070 kg, 102.260 kg and 156.570 kg respectively.

Steel wire polishing wheel, unit price 2.05 yuan per piece: 0.034, 0.307 and 0.146 pieces respectively.

Steel shot S660, unit price 4.44 yuan per kg: 18.000 kg for both carbon steel quotas, none for the stainless steel quota.

Carbon steel plate Q235, unit price 4 102.56 yuan per tonne: 1.030 t and 0.826 t for the two carbon steel quotas.

Copper ore sand, unit price 0.39 yuan per kg: 400.000 kg for both carbon steel quotas.

Carbon steel plate, unit price 4.10 yuan per kg: 11.078 kg and 19.920 kg respectively.

Tungsten rod, unit price 454.10 yuan per kg: 1.632 kg, 1.150 kg and 1.761 kg respectively.

Stainless steel plate 316L, thickness 0.5 mm to 25 mm, unit price 28.50 yuan per kg: 8.706 kg, stainless steel quota only.

Stainless steel angle 40 mm by 4 mm, unit price 29.92 yuan per kg: 4.893 kg, stainless steel quota only.

Stainless steel abrasive wheel, diameter 150 mm by 3 mm, unit price 19.66 yuan per piece: 47.953 pieces, stainless steel quota only.

Stainless steel round bar, diameter 10 mm, grade 0Cr18Ni9Ti, unit price 29.92 yuan per kg: 10.960 kg, stainless steel quota only.

Steel plate of 16 mm thickness, grade Q235A, unit price 3.29 yuan per kg: 259.310 kg, 182.780 kg and 279.880 kg respectively.

Galvanized iron wire No. 10, unit price 4.19 yuan per kg: 9.067 kg, 6.390 kg and 9.780 kg respectively.

Galvanized iron wire No. 2, unit price 5.87 yuan per kg: 6.347 kg, 4.473 kg and 6.847 kg respectively.

Binding straps, length 200 mm, unit price 30.65 yuan per pack: 6.290, 5.815 and 8.333 packs respectively.

Lint-free cotton cloth, unit price 8.45 yuan per kg: 0.657 kg, 1.211 kg and 2.590 kg respectively.

Fireproof and waterproof tarpaulin 6000 mm by 8000 mm, unit price 1 180.34 yuan per sheet: 0.272, 0.191 and 0.294 sheets respectively.

Rags, unit price 7.69 yuan per kg: 0.177 kg, 3.916 kg and 2.931 kg respectively.

Abrasive cloth No. 0, unit price 0.86 yuan per sheet: 0.227, 10.035 and 8.453 sheets respectively.

Polyethylene film of 0.08 mm thickness, unit price 8.55 yuan per kg: 19.490 kg, 13.740 kg and 22.508 kg respectively.

Ordinary rubber sheet, unit price 7.09 yuan per kg: 12.880 kg, 34.352 kg and 5.795 kg

respectively.

Rubber pad of 2 mm thickness, unit price 7.25 yuan per kg: 152.530 kg, 131.160 kg and 158.280 kg respectively.

Shear studs 3/4 inch by 6 inch, grade SWRCH18A, unit price 14.36 yuan per kg: 30.000 kg and 8.000 kg for the two carbon steel quotas.

Abrasive wheel of 180 mm diameter, unit price 4.31 yuan per piece: 14.620, 15.238 and 4.227 pieces respectively.

Nylon abrasive disc of 100 mm diameter, unit price 1.10 yuan per piece: 0.238, 2.147 and 1.024 pieces respectively.

Stainless steel welding electrode E308 of 3.2 mm diameter, unit price 209.40 yuan per kg: 52.970 kg, stainless steel quota only.

Welding nozzles, unit price 7.69 yuan each: 5.590, 3.016 and 3.090 each respectively.

Carbon steel welding electrode, unit price 4.84 yuan per kg: 52.860 kg and 52.510 kg for the two carbon steel quotas.

Steel grinding head of 16 mm diameter, unit price 34.19 yuan each: 1.813, 1.278 and 1.960 each respectively.

Carbon steel polishing disc 150 mm by 6 mm, unit price 4.44 yuan per piece: 19.947 and 14.060 pieces for the two carbon steel quotas.

Test coupons 80 mm by 20 mm by 3 mm, unit price 68.38 yuan per block: 0.026, 0.048 and 0.104 blocks respectively.

Special primer, unit price 135.03 yuan per kg: 6.700 kg for both carbon steel quotas.

Special topcoat, unit price 78.76 yuan per kg: 17.880 kg for both carbon steel quotas.

Magnetic powder, unit price 85.47 yuan per kg: 0.023 kg, 1.004 kg and 0.845 kg respectively.

Coupling agent, unit price 75.21 yuan per kg: 0.204 kg, 1.841 kg and 0.877 kg respectively.

Thinner, unit price 11.39 yuan per kg: 4.916 kg for both carbon steel quotas.

Argon gas, unit price 44.44 yuan per cylinder: 10.646, 21.130 and 7.835 cylinders respectively.

Oxygen, industrial grade, unit price 27.40 yuan per cylinder: 2.730, 1.924 and 2.946 cylinders respectively.

Acetylene, unit price 92.31 yuan per cylinder: 0.925, 0.652 and 0.998 cylinders respectively.

Foaming agent WJ-Z200ML, unit price 30.77 yuan per bottle: 1.360, 0.959 and 1.468