CLAIMS

1. A steel plate comprising
a chemical composition containing, in mass%,
C: 0.20 % or more and 0.70 % or less,
Si: 0.05 % or more and 1.0 % or less,
Mn: 15 % or more and 35 % or less,
Al: 0.1 % or less,
Cr: 0.70 % or more and 8.0 % or less,
N: 0.0010 % or more and 0.0500 % or less,
P: 0.03 % or less, and
S: 0.005 % or less,
with a balance consisting of Fe and inevitable impurities,
wherein tensile strength is 600 MPa or more,
absorbed energy at -196 °C is 27 J or more, and
reduction of area in a thickness direction of the steel plate is 30 % or more.

2. The steel plate according to claim 1, wherein the chemical composition further contains, in mass%, one or more selected from
Nb: 0.003 % or more and 0.030 % or less,
V: 0.01 % or more and 0.10 % or less,
Ti: 0.003 % or more and 0.040 % or less, and
B: 0.0003 % or more and 0.0100 % or less.

3. The steel plate according to claim 1 or 2, wherein the chemical composition further contains, in mass%, one or more selected from
Cu: 0.01 % or more and 0.70 % or less,
Ni: 0.01 % or more and 0.50 % or less,
Sn: 0.01 % or more and 0.30 % or less,
Sb: 0.01 % or more and 0.30 % or less,
Mo: 0.05 % or more and 2.0 % or less, and
W: 0.05 % or more and 2.0 % or less.

4. The steel plate according to any one of claims 1 to 3, wherein the chemical composition further contains, in mass%, one or more selected from

Ca: 0.0005 % or more and 0.0050 % or less,

Mg: 0.0005 % or more and 0.0100 % or less, and

REM: 0.0010 % or more and 0.0200 % or less.

5. A method of producing the steel plate according to any one of claims 1 to 4, the method comprising:

heating a steel raw material to 1000 °C or more and 1300 °C or less; and

thereafter subjecting the steel raw material to hot rolling with a rolling reduction ratio of 3 or more, wherein a rolling reduction of each of at least two passes of final three passes is 10 % or more.