Ship type service

◆ **Joint development of ship type**

Ship type is jointly developed in conjunction with the shipyard and designer. By making use of CCS advantage in information and technology, based on comprehensive information such as route, port and channel and by means of advanced technical rules, technical economic analysis, structural and performance calculation analysis, effective technical solutions are provided in order to jointly develop top quality ship type.

◆ **Optimization and upgrading of ship type**

Reliable structural optimization and upgrading solutions are provided by means of scientifically reasonable quantitative and qualitative analysis and research based on current characteristics of ship type, so as to provide strong support for ship type upgrading, making the ship safer, more environmentally friendly, more economical and more efficient.

◆ **Approval of ship type**

Compliance evaluation is carried out on ship types provided by shipyards and designers in accordance with agreed rules and conventions, and ship type approval certificate is issued to lay the foundation for ship type promotion and plan approval in the future.

◆ **Technical training of clients**

Based on the needs of the clients, CCS can provide comprehensive and customized technical training service related to rules, software and technical solutions.



CCS PERFORMANCES AND SERVICES ON PAPER PULP CARRIER

CHINA CLASSIFICATION SOCIETY
中国船级社

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CHINA CLASSIFICATION SOCIETY
中国船级社

Overview

By sticking to the policy of "building first-class international classification society with own characteristics and with technology as the foundation and credibility as the cornerstone", CCS makes continuous breakthroughs in the field of paper pulp carrier through advanced technology and quality service.

With rich and mature plan approval and survey technologies, CCS devotes its technologies and experiences to the ship building industry and offers all-round services to clients in terms of design, manufacturing, maintenance and survey. Based on in-depth research in the overall arrangement, scantlings and key techniques including strength assessment of paper pulp carriers, CCS has further promoted its service capability in ship type service and provided clients with all-round and efficient technical services.

By committing to the mission of "safety, environmental protection and creating value for clients and society" and based on over 90 offices established across the globe, CCS provides the ship owner with 7X 24 hours of survey and technical support services. Relying on its highly efficient service system structure, CCS continuously provides comprehensive support for conducting survey activities, safeguarding ship safety and emergency response to accidents. CCS has continuously achieved outstanding performance in three main MoUs and witnessed healthy and steady increase of its fleet size.

Characteristics of ship type

Paper pulp carrier is the vessel mainly engaged in the shipment of paper pulp together with other bulk cargo. Paper pulp cargo of international trade mainly comprises paper pulp in bundles normally about 2 to 2.5t in weight that are loaded/unloaded by dedicated lifting hook. The cargo hold generally takes the shape of a container and the structural arrangement generally adopts large deck opening, double bottom and double side skin structure with continuous longitudinal hatch coaming and no top side tank.



Loading and unloading of paper pulp

Major paper pulp exporters in the world including Brazil, Canada, America, and Chile mainly export paper pulp to the Asian region.

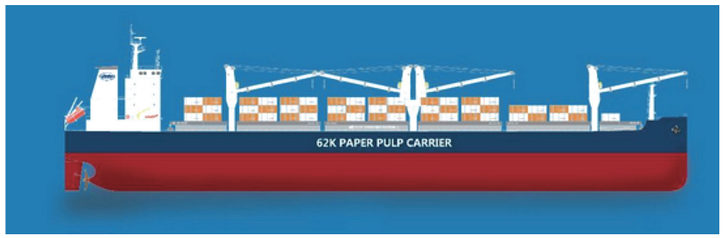
Typical characters of classification and class notations

★ CSA, General Dry Cargo Ship, Double Side Skin, PSPC(B), Loading Computer(S, I, G, D), In-Water Survey, PMS, ERS, Equipped with container securing arrangements, Grab[20],
★ CSM, AUT-0, SCM, GPR, Green Ship II, FTP, BWMP, BWMS;

Key technologies:

1) Structural safety:

◆Longitudinal strength assessment of ships with large openings and crane ships;
◆Hull deformation analysis and control requirement. With relatively large deck openings in the cargo hold, when the ship navigates in oblique waves, hydrodynamic torque will lead to torsional deformation in hull and hatch;
◆Structural optimization, balance between structural weight and structural safety;



Typical paper pulp carrier

2) Sox & NOx emission control solutions

3) Hull vibration and noise assessment

4) Ship energy efficiency service: providing technical services regarding energy efficiency including resistance reduction technique (including the optimizing of molded lines), efficient propulsion system, energy-saving device, light weight control, optimizing of machinery and electric equipment and systems, optimum trim, technique of new energy utilization, and the intelligent online management system of energy efficiency, etc.

