CCS 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, and 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 the 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.

◆ **Recommendation of ship type**

Excellent and reasonable ship type is recommended in accordance with the basic needs of the clients and based on CCS ship type performance accumulation and advantage in technical experience, covering main scantling, structural arrangement, type selection of main engine, energy efficiency indicator and emission scheme.

◆ **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 CAR CARRIER

CHINA CLASSIFICATION SOCIETY
中国船级社

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APR, 2023

This is made of recycled paper.

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 special car carriers through advanced technology and quality service.

CCS has rich and mature plan approval and inspection technology, and is committed to contributing its technology and experience to the shipbuilding industry, providing customers with comprehensive services from design, manufacturing, maintenance and inspection. Based on the special structure design requirements and rule standards for car carriers, including the overall structure arrangement and scale of vehicle hold, FE design verification, details of the key nodes and hot spot fatigue analysis and nonlinear buckling analysis, vibration analysis, transverse racking analysis and other technical requirements, high efficient and reliable assessment softwares (including descriptive rules, direct analysis and fatigue analysis, etc.) have been developed to meet customer demands and to provide corresponding 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

The hull of car carrier consists of multiple decks and double bottoms. The number of vehicle decks usually depends on its function and loading capacity.

The car carrier normally has the same feature and loading/unloading method as a general ro-ro ship, but more particular and specialized, e.g. large moulded depth and multiple vehicle decks are provided to increase the loading capacity; less transverse bulkheads are provided for flexible loading; anti-heeling tanks are provided to maintain the balance of the hull during and after loading; multiple moveable vehicle decks and moveable ramps are provided to improve the flexibility and capacity rate of vehicle loading; internal thin plate structure is provided.

Typical classification characters and class notations

★ CSA, Car Carrier, PSPC(B), In-Water Survey, PMS, ERS,
★ CSM, AUT-0, SCM, GPR, Green Ship II, BWMP, BWMS, FTP

Performance

The fleet classed with China Classification Society covers the series of ship types of 1000cars, 2000cars, 2500cars and 4000cars, and the technical services have been extended to ship types of 5000cars, 8000cars and 10000cars.

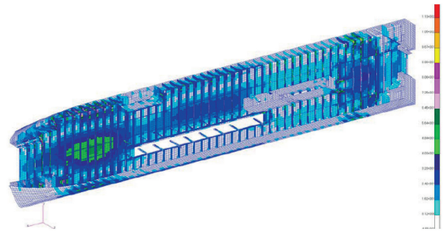


"An Ji" 3800CEU car carrier

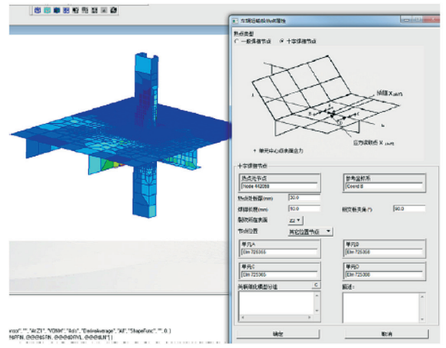
Key technology

1) Structure safety assessment

◆ Whole ship finite element



◆ Fatigue strength



2) Special arrangements: such as pillar arrangement, stern door arrangement, multi-deck arrangement, cargo hold ventilation arrangement, etc.

3) SOx & NOx emission control solutions

4) Hull vibration and noise assessment

5) i-Ship

6) Ship energy efficiency services: providing ship resistance reduction technology (including profile optimization), efficient propulsion system, energy saving device, lightweight control, machinery and electrical equipment and system optimization, optimal trim, new energy utilization technology, energy efficiency on-line intelligent management system and other energy efficiency technology.

◆ Transverse deformation

