2024년 4분기

세계 컨테이너 항만 서비스 지표

PORT SERVICE INDICATORS

발행일 2025년 2월 21일 | **편집·발행인** 김종덕 원장 | **발행처** 한국해양수산개발원 항만연구본부 항만수요분석연구실
주소 49111 부산광역시 영도구 해양로 301번길 26(동삼동 한국해양수산개발원) | **TEL.** 051-797-4800 | **FAX.** 051-797-4810

선석 생산성 03
순선석 생산성 09
평균 하역량 11
평균 선형 13
평균 대기시간 15

항만 서비스 지표는 전 세계 컨테이너 항만의 경쟁력을 비교할 수 있는 대표 지표를 분석하여
연간 5회(분기별 4회, 연간 1회) 이메일로 배포하고 있으며
한국해양수산개발원 홈페이지(www.kmi.re.kr)에서도 확인하실 수 있습니다.
이메일 수신을 원하시는 분은 전화(051-797-4657) 또는 이메일(pdac@kmi.re.kr)로 연락주시기 바랍니다.

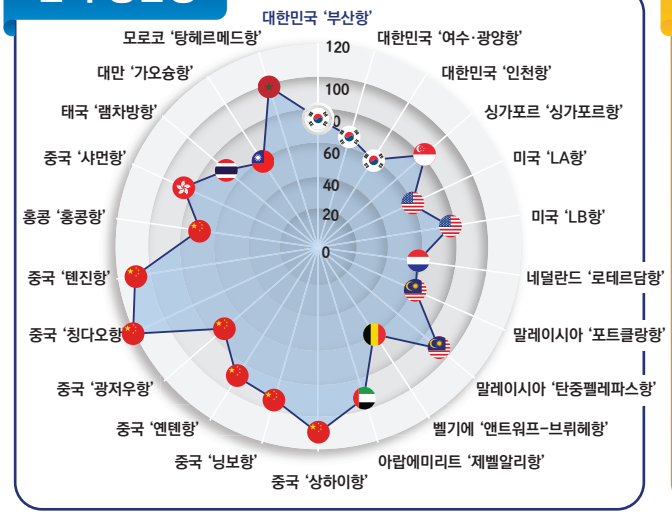
KMI 한국해양수산개발원
KOREA MARITIME INSTITUTE

주요 항만 결과 요약

(전체 선형 기준)

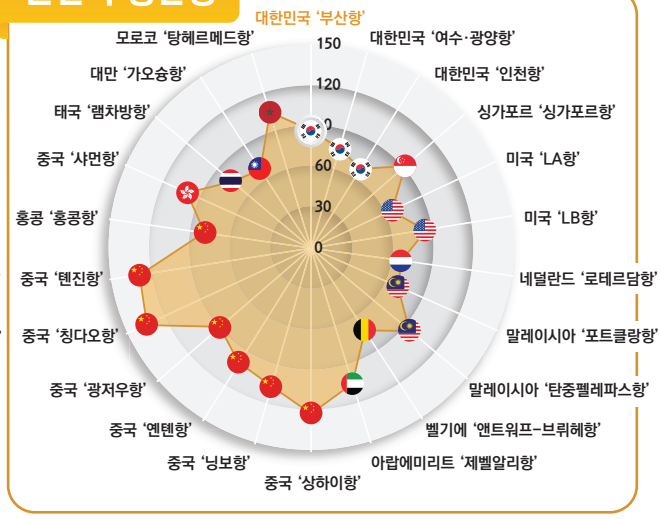
선석 생산성

(회/시간)



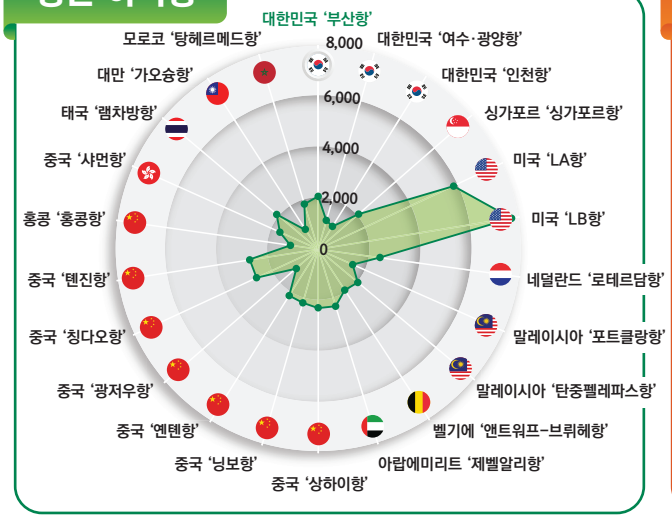
순선석 생산성

(회/시간)



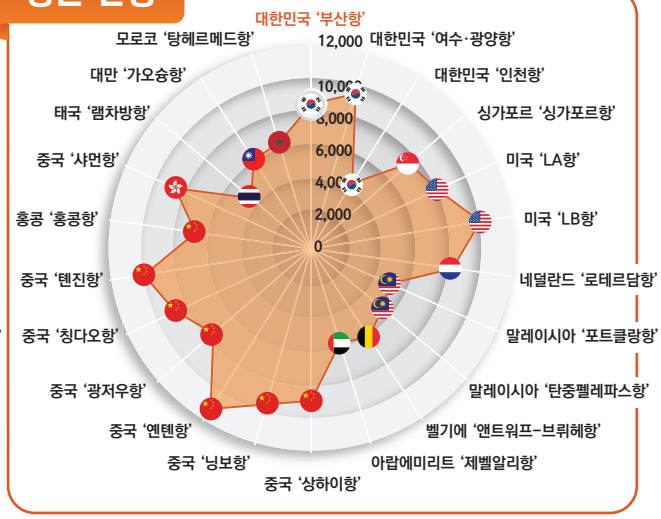
평균 하역량

(VAN)



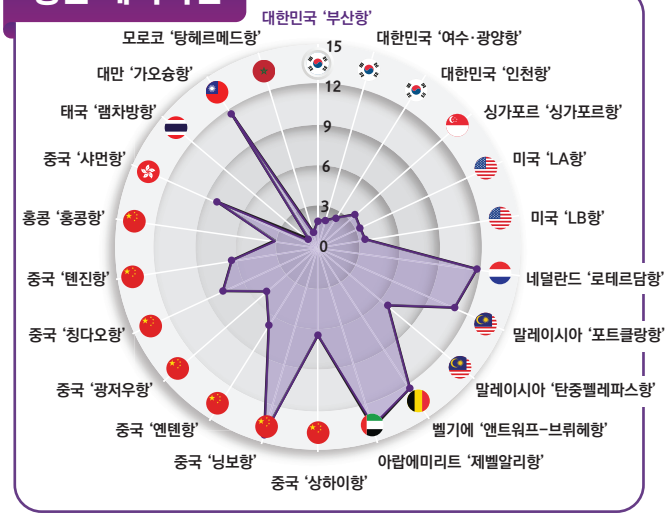
평균 선형

(TEU)



평균 대기시간

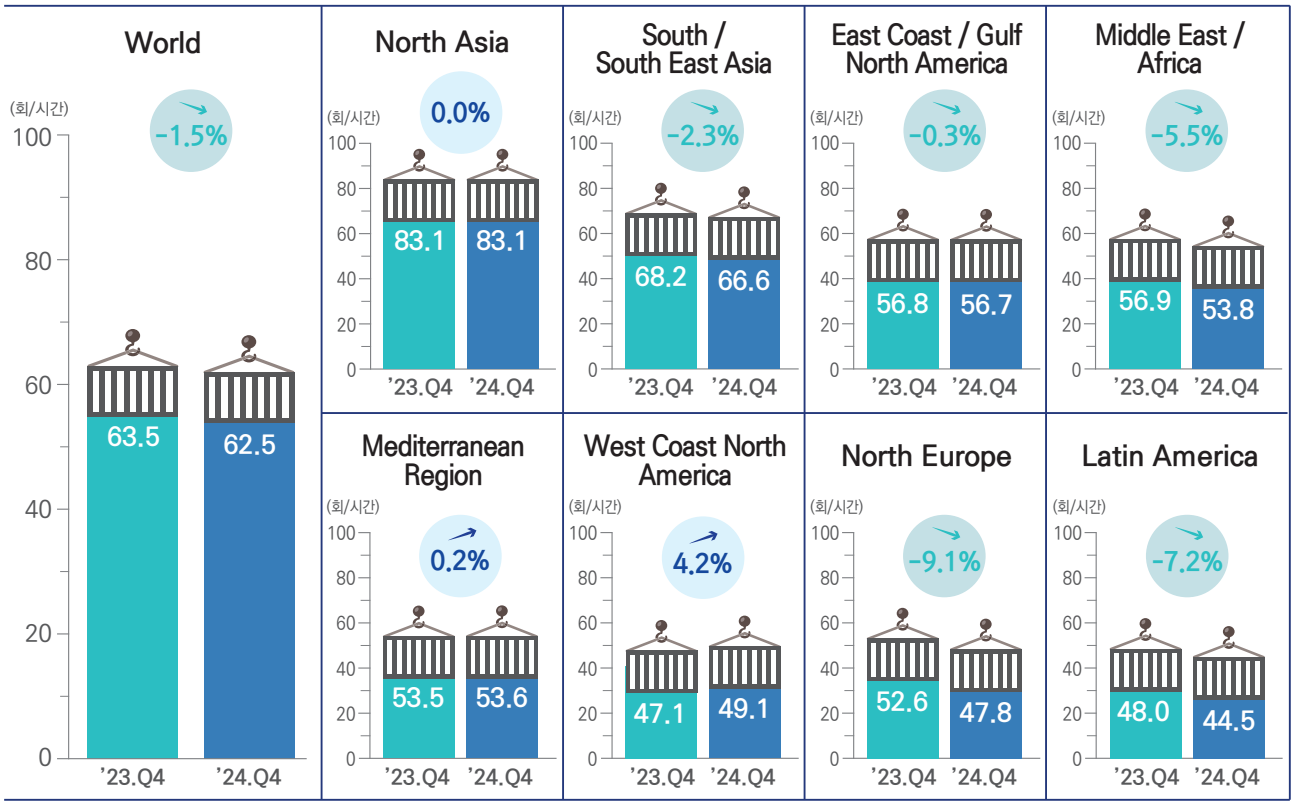
(시간)



* 주 : 국내 주요 컨테이너 처리항만 및 2023년 기준 컨테이너 상위 20위 항만 대상

선석 생산성 Berth Productivity

지역별 (전체 선형)



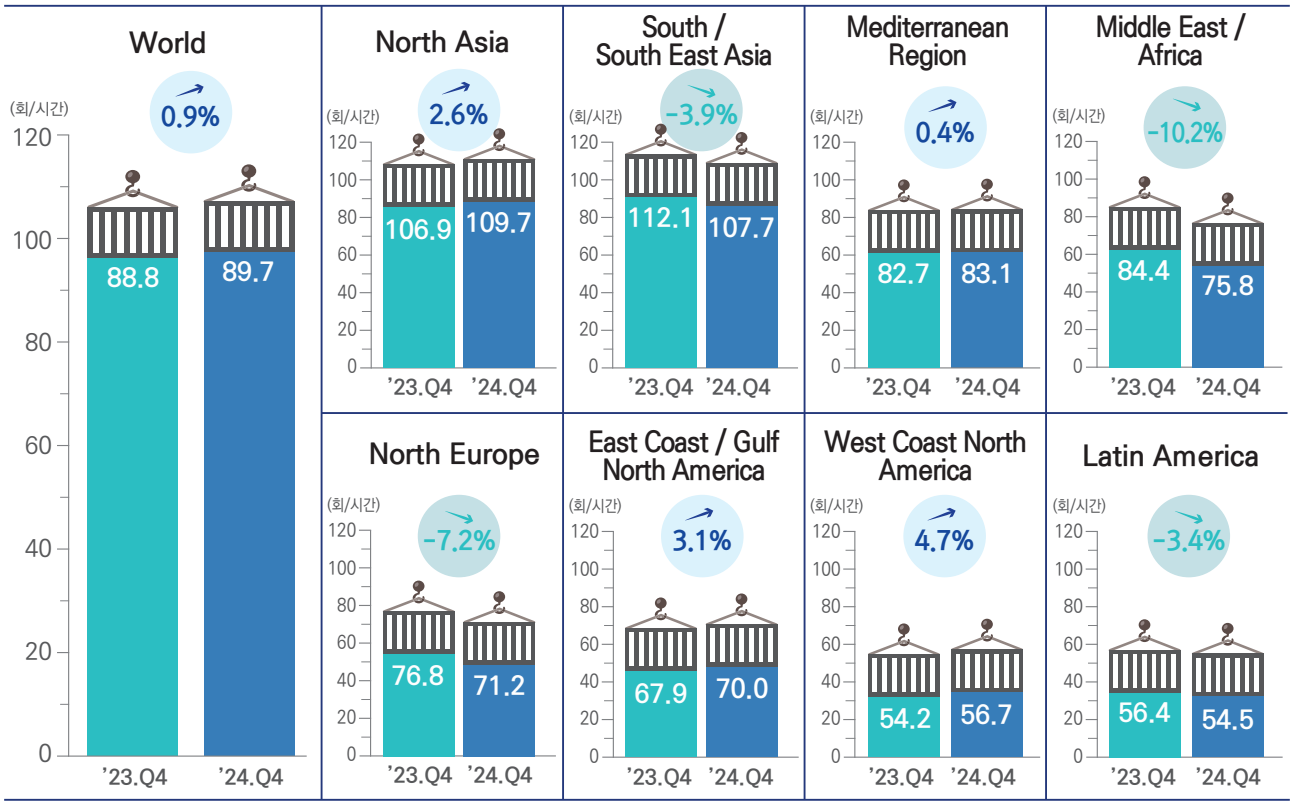
순위	지역	선석 생산성(회/시간)					전년 동기 대비	순위				
		'23.Q4	'24.Q1	'24.Q2	'24.Q3	'24.Q4		'23.Q4	'24.Q1	'24.Q2	'24.Q3	'24.Q4
1	North Asia	83.1	83.3	83.8	84.0	83.1	0.0%	1	1	1	1	1
2	South/South East Asia	68.2	66.5	63.2	65.6	66.6	↓2.3%	2	2	2	2	2
3	East Coast/Gulf North America	56.8	54.8	57.9	57.4	56.7	↓0.3%	4	3	3	3	3
4	Middle East/Africa	56.9	54.2	51.5	55.2	53.8	↓5.5%	3	4	6	4	4
5	Mediterranean Region	53.5	51.8	53.4	54.6	53.6	↑0.2%	5	6	4	5	5
6	West Coast North America	47.1	47.0	49.3	47.9	49.1	↑4.2%	8	8	7	7	6
7	North Europe	52.6	52.8	52.3	51.8	47.8	↓9.1%	6	5	5	6	7
8	Latin America	48.0	48.7	47.0	45.5	44.5	↓7.2%	7	7	8	8	8
	World	63.5	62.8	62.3	63.0	62.5	↓1.5%	–	–	–	–	–

자료 : IHS Markit, 항만수요분석연구실 분석
주 : 전 세계 약 400여개 항만의 샘플 데이터를 기반으로 함

- '24년 4분기 전체 선형의 전 세계 선석생산성은 62.5회/hr로 전년 동기 대비 1.5%, 전 분기 대비 0.7% 하락함
- 남/동남아시아 및 북미서안 지역을 제외하고는 전 분기 대비 모두 감소세를 기록하였으며, 특히 북유럽 지역의 선석생산성이 전 분기 대비 7.7% 큰 폭으로 감소함

선석 생산성 Berth Productivity

지역별 (8,000TEU 이상)



순위	지역	선석 생산성(회/시간)					전년 동기 대비	순위				
		'23.Q4	'24.Q1	'24.Q2	'24.Q3	'24.Q4		'23.Q4	'24.Q1	'24.Q2	'24.Q3	'24.Q4
1	North Asia	106.9	106.1	108.9	109.0	109.7	↑2.6%	2	2	1	1	1
2	South/South East Asia	112.1	110.3	101.9	106.5	107.7	↓3.9%	1	1	2	2	2
3	Mediterranean Region	82.7	82.0	83.6	82.5	83.1	↑0.4%	4	3	3	3	3
4	Middle East/Africa	84.4	80.2	76.8	82.3	75.8	↓10.2%	3	4	5	4	4
5	North Europe	76.8	78.5	77.5	76.3	71.2	↓7.2%	5	5	4	5	5
6	East Coast/Gulf North America	67.9	66.4	71.5	70.0	70.0	↑3.1%	6	6	6	6	6
7	West Coast North America	54.2	55.6	58.8	55.1	56.7	↑4.7%	8	8	7	7	7
8	Latin America	56.4	59.1	57.0	53.7	54.5	↓3.4%	7	7	8	8	8
World		88.8	89.0	89.5	89.3	89.7	↑0.9%	–	–	–	–	–

자료 : IHS Markit, 항만수요분석연구실 분석
주 : 전 세계 약 400여개 항만의 샘플 데이터를 기반으로 함

- **8,000TEU 이상 선형의 전 세계 선석생산성은 89.7회/hr로 전체 선형에서와 달리 전년 동기 대비 0.9%, 전 분기 대비 0.4% 증가세를 기록함**
- **북유럽 지역과 중동/아프리카 지역을 제외하고 모두 전 분기 대비 증가세를 기록하였으며, 특히 북미서안 지역에서의 증가율이 높게 나타남**

선석 생산성 Berth Productivity

국가별 (전체 선형)

순위	국가	'24.Q4	'23.Q4	증감률
1위	오만	109.7	108.9	0.7%
2위	중국	95.4	95.9	-0.5%
3위	모로코	90.5	85.9	5.4%
4위	카타르	90.0	86.5	4.0%
5위	아랍에미레이트	88.4	93.9	-5.9%
6위	싱가포르	82.9	83.7	-1.0%
7위	사우디아라비아	80.6	76.3	5.7%
8위	베트남	79.7	80.6	-1.2%
9위	말레이시아	76.9	78.2	-1.6%
10위	인도	75.8	82.4	-8.0%
11위	바레인	75.1	67.2	11.7%
12위	대한민국	74.0	74.0	0.0%
13위	홍콩	70.4	67.0	5.0%
14위	이집트	69.8	63.0	10.7%
15위	스리랑카	66.2	81.4	-18.7%
16위	태국	63.8	59.5	7.2%
17위	파키스탄	61.7	57.3	7.8%
18위	코스타리카	59.6	56.6	5.2%
19위	벨기에	59.4	66.2	-10.3%
20위	우루과이	58.5	53.8	8.8%

자료 : IHS Markit, 항만수요분석연구실 분석
주 : 전 세계 약 400여개 항만의 샘플 데이터를 기반으로 함

- '24년 4분기 전체 선형의 국가별 선석생산성 상위 20위 중 대한민국은 지난해와 유사한 74.0회/hr를 기록하면서 12위를 기록함
- 상위 20개 국가 중 8개 국가는 전년 동기 대비 감소세를 기록하였으며, 12개 국가는 증가세를 기록함
- 바레인(+11.7%), 이집트(+10.7%), 스리랑카(-18.7%), 벨기에(-10.3%) 등이 두 자릿수 이상 증감세를 기록함

선석 생산성 Berth Productivity

국가별 (8,000TEU 이상)

순위	국가	'24.Q4	'23.Q4	증감률
1위	모로코	133.7	131.0	2.1%
2위	말레이시아	133.5	134.7	-0.9%
3위	베트남	125.2	117.8	6.3%
4위	중국	121.1	119.7	1.1%
5위	싱가포르	114.7	116.4	-1.4%
6위	오만	113.0	107.5	5.1%
7위	아랍에미레이트	105.0	106.4	-1.4%
8위	폴란드	99.6	99.8	-0.2%
9위	인도	94.7	108.2	-12.4%
10위	이집트	91.9	88.9	3.3%
11위	카타르	91.0	94.5	-3.7%
12위	홍콩	90.5	81.9	10.6%
13위	대한민국	89.4	88.2	1.3%
14위	덴마크	88.7	96.5	-8.1%
15위	네덜란드	85.9	96.7	-11.2%
16위	태국	85.5	76.4	11.8%
17위	스리랑카	85.1	106.3	-20.0%
18위	사우디아라비아	80.6	80.3	0.4%
19위	벨기에	77.6	86.3	-10.1%
20위	슬로베니아	72.4	72.5	-0.3%

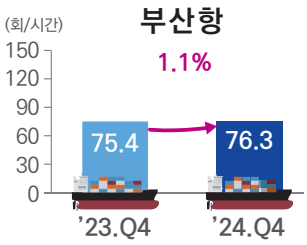
자료 : IHS Markit, 항만수요분석연구실 분석
주 : 전 세계 약 400여개 항만의 샘플 데이터를 기반으로 함

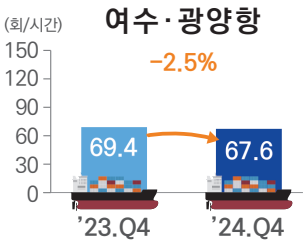
- 8,000TEU 이상 선형의 경우 대한민국은 전년 동기 대비 1.3% 증기한 89.4회/hr를 기록하면서 13위를 기록함
- 상위 20개 국가 중 11개 국가는 전년 동기 대비 감소세를 기록하였으며 9개 국가는 증가세를 기록함
- 인도(-12.4%), 홍콩(+10.6%), 네덜란드(-11.2%), 태국(+11.8%), 스리랑카(-20.0%), 벨기에(-10.1%) 등이 두 자릿수 이상 증감세를 기록함

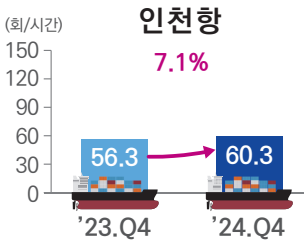
선석 생산성 Berth Productivity

항만별 (전체 선형)

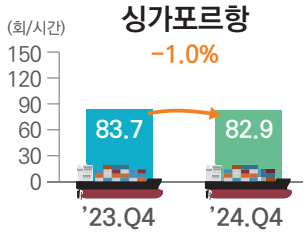
국내 주요 항만 선석 생산성

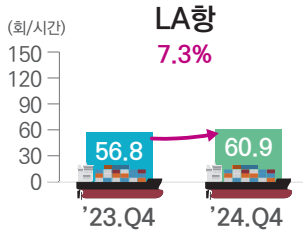


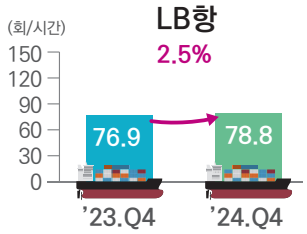


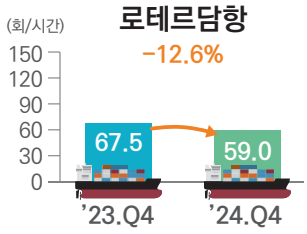


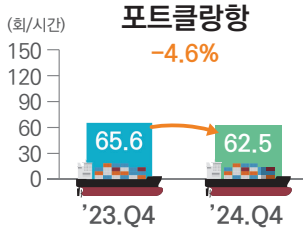
세계 주요 항만 선석생산성

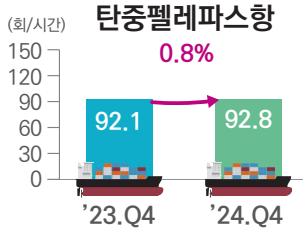


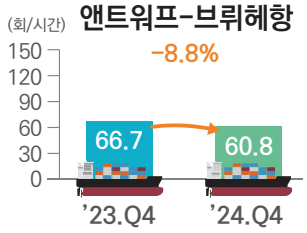


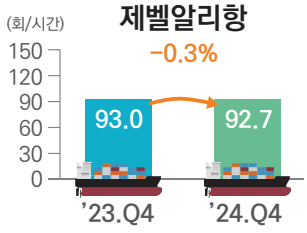


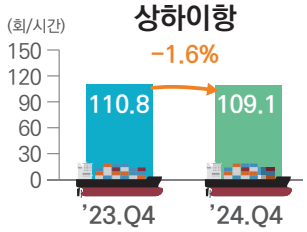


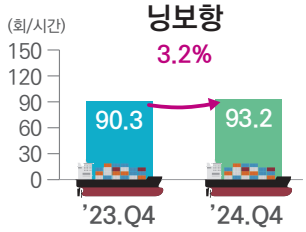


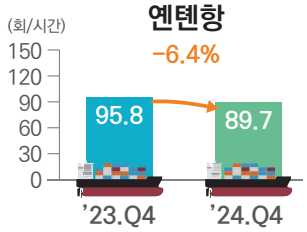


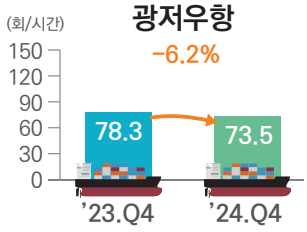


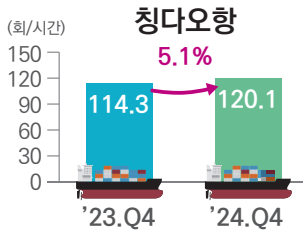


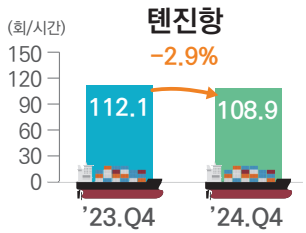


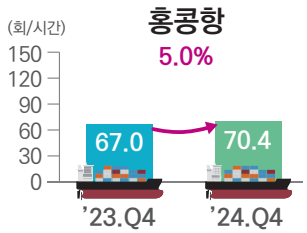


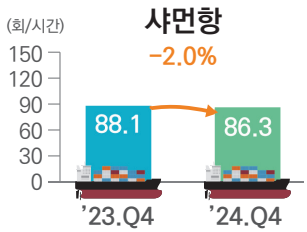


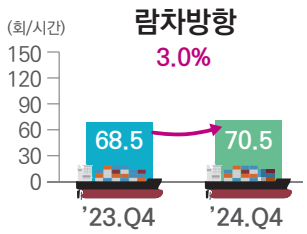


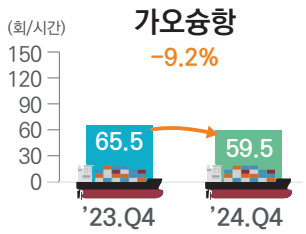


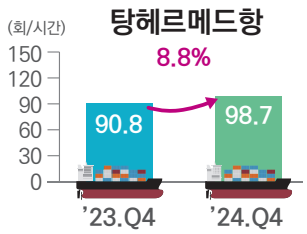










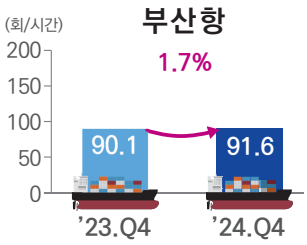


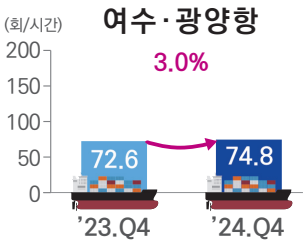
- '24년 4분기 국내 주요 항만의 전체 선형 선석생산성은 부산항(+1.1%), 인천항(+7.1%)은 전년 동기 대비 증가하였으며, 광양항(-2.5%)은 같은 기간 감소함
- 세계 주요 항만의 경우 로테르담항이 전년 동기 대비 12.6% 큰 폭으로 감소하였으며, 그 외 항만은 한 자릿 수 증감세를 기록함

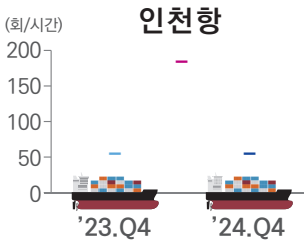
선석 생산성 Berth Productivity

항만별 (8,000TEU 이상)

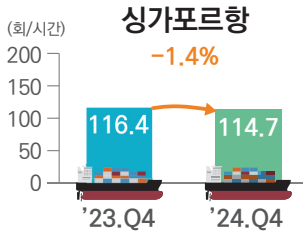
국내 주요 항만 선석 생산성

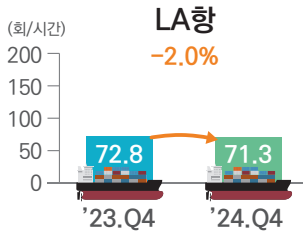


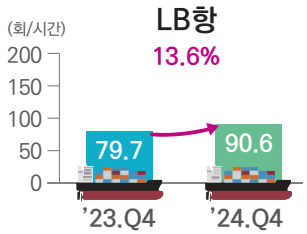


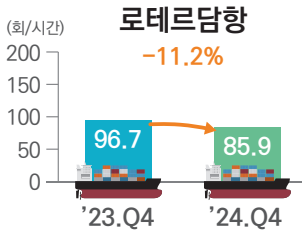


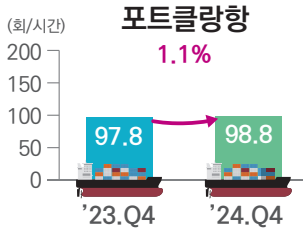
세계 주요 항만 선석생산성

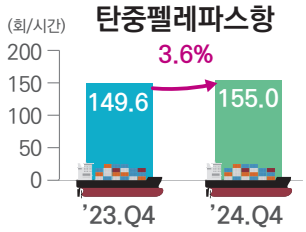


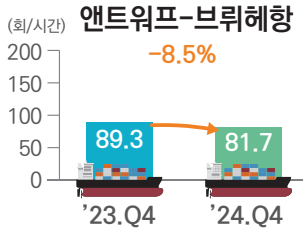


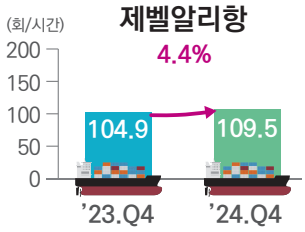


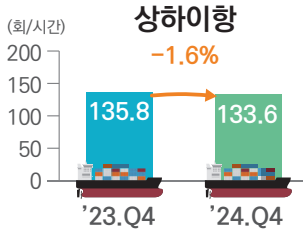


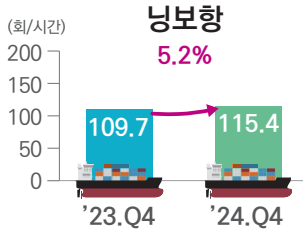


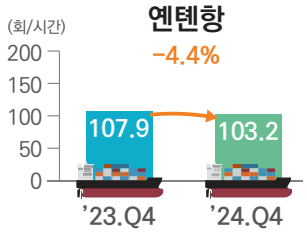


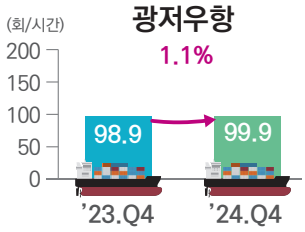


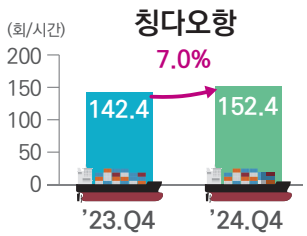


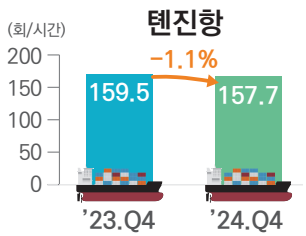


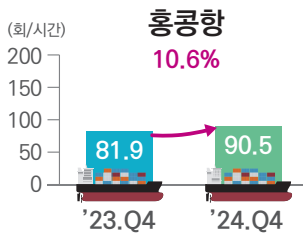


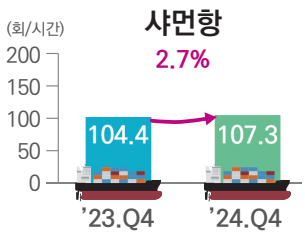


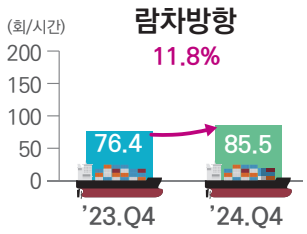


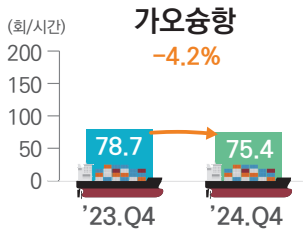


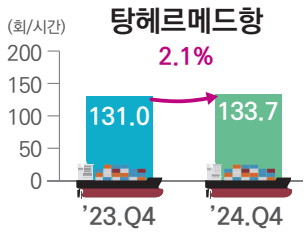










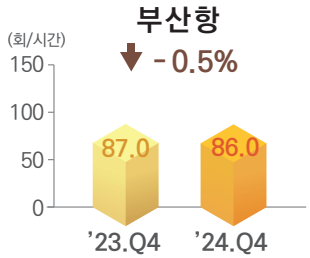


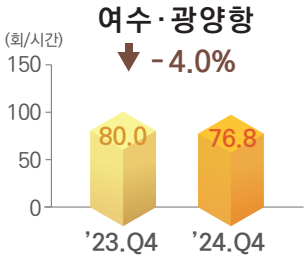
- 국내 주요 항만의 8,000TEU 이상 선형의 선석생산성은 부산항(+1.7%), 광양항(+3.0%) 모두 전년 동기 대비 증가세를 기록함
- 세계 주요 항만의 경우 로테르담항(-11.2%), 홍콩항(+10.6%), 람차방항(+11.8%)이 두 자릿수 이상 증감세를 기록함

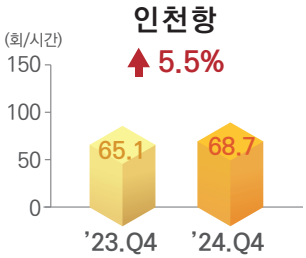
순선석 생산성 Net Berth Productivity

항만별 (전체 선형)

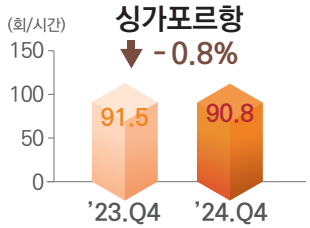
국내 주요 항만의 순선석 생산성

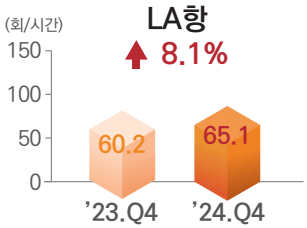


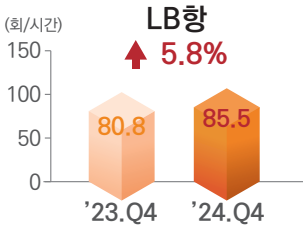


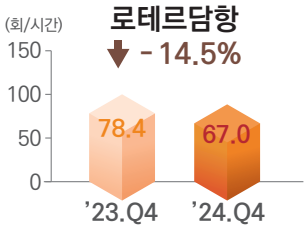


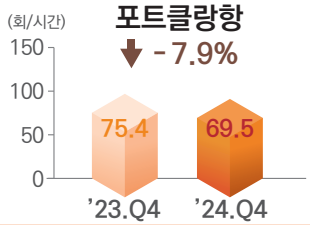
세계 주요 항만의 순선석 생산성

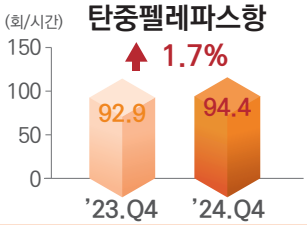


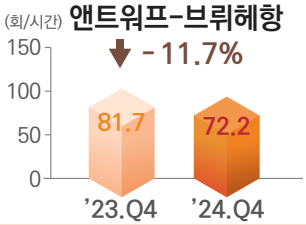


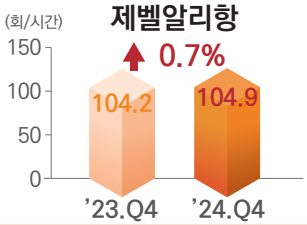


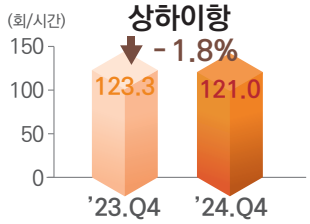


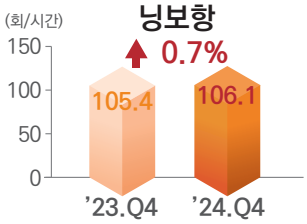


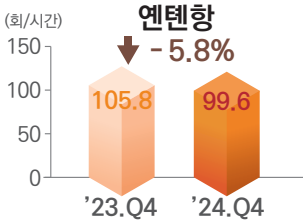


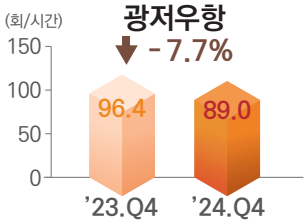


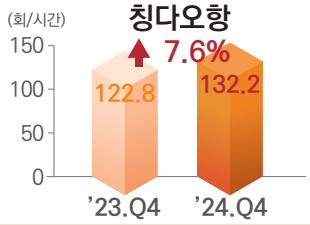


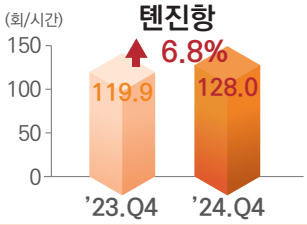


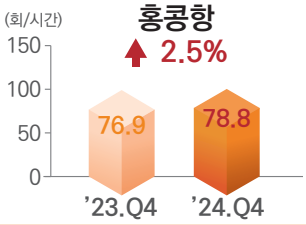


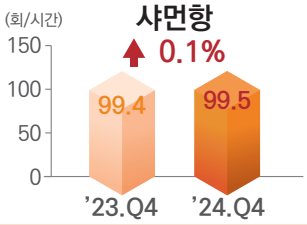


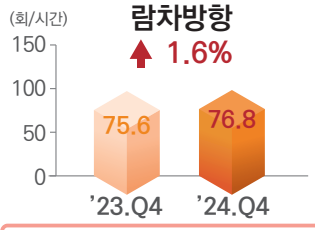


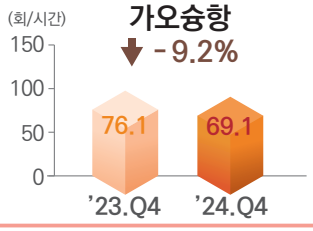


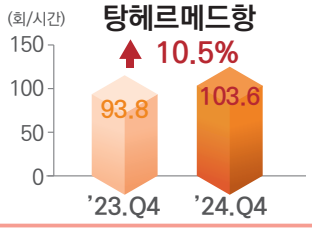










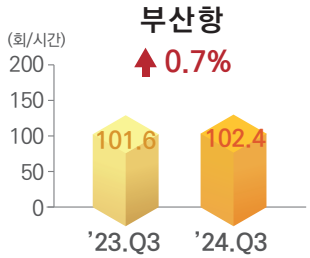


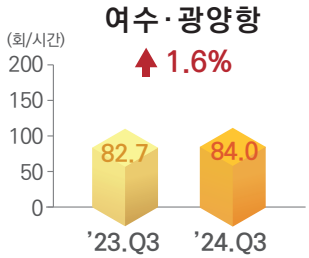
- '24년 4분기 국내 주요 항만의 전체 선형 순선석 생산성은 부산항(-0.5%), 광양항(-4.0%)은 전년 동기 대비 감소하였으나, 인천항(+5.5%)은 같은 기간 증가세를 기록함
- 세계 주요 항만의 경우 로테르담항(-14.5%), 앤트워프-브뤼헤항(-11.7%), 탕헤르메드항(+10.5%)이 두 자릿 수 이상 증감세를 기록함

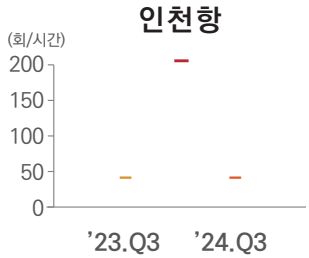
순선석 생산성 Net Berth Productivity

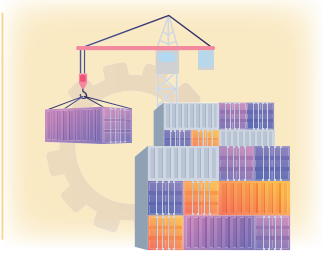
항만별 (8,000TEU 이상)

국내 주요 항만의 순선석 생산성

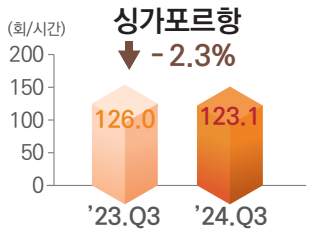


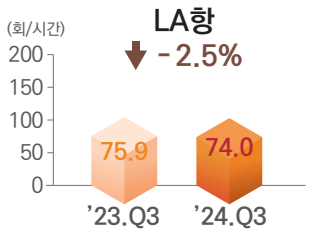


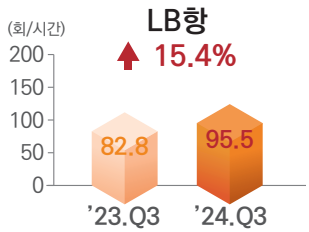


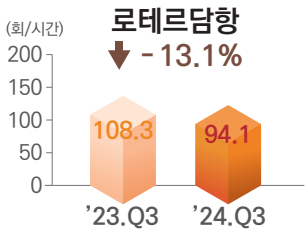


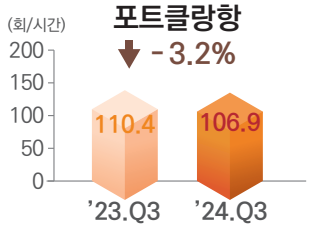
세계 주요 항만의 순선석 생산성

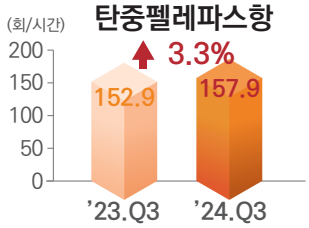


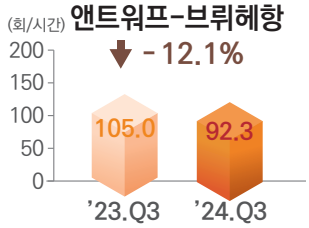


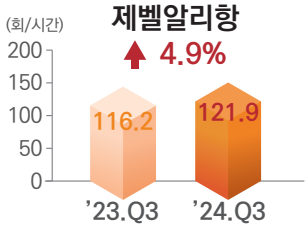


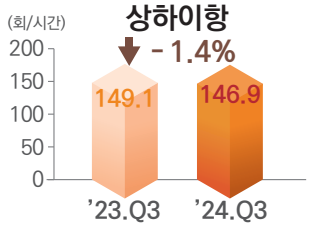


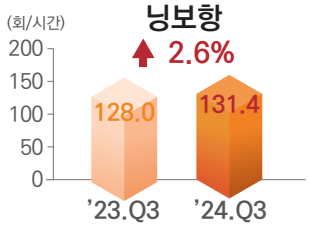


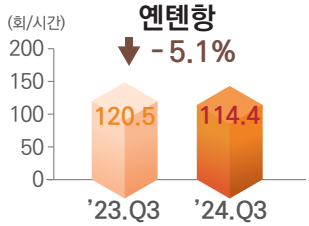


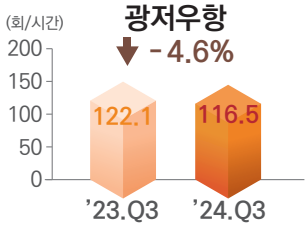


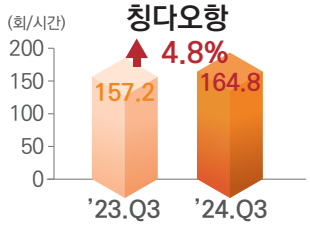


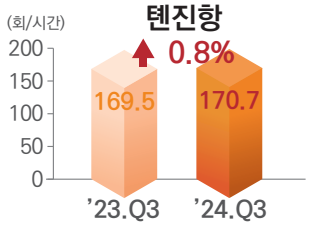


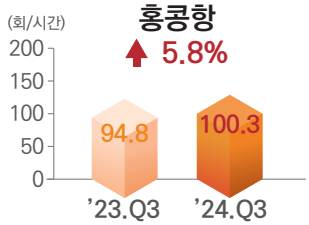


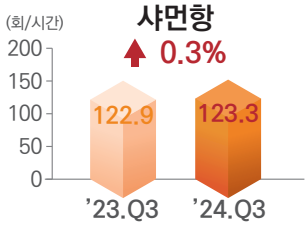


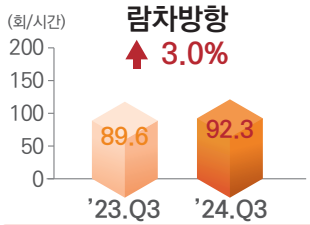


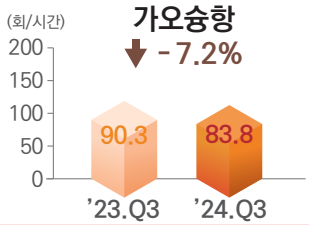


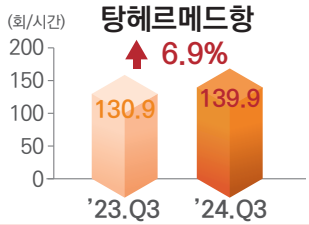










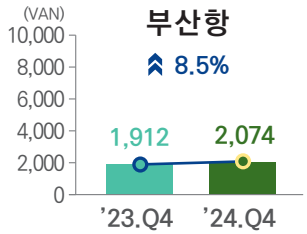


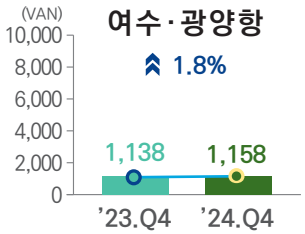
- 국내 주요 항만의 8,000TEU 이상 선형의 순선석 생산성은 부산항(+0.7%), 광양항(+1.6%) 모두 전년 동기 증가세를 기록함
- 세계 주요 항만의 경우 LB항(+15.4%), 로테르담항(-13.1%), 앤트워프-브뤼헤항(-12.1%)이 두 자릿 수 이상 증감세를 기록함

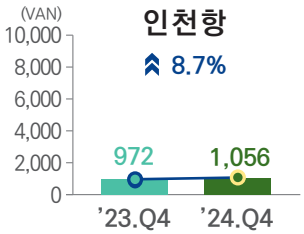
평균 하역량 Average Container Throughput

항만별 (전체 선형)

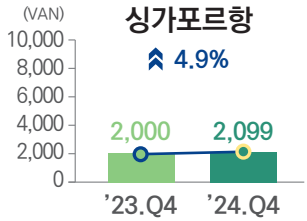
국내 주요 항만 평균 하역량

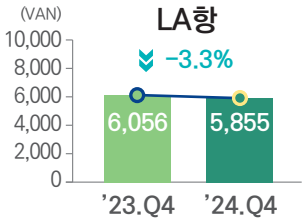


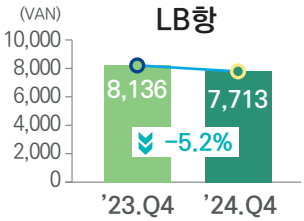


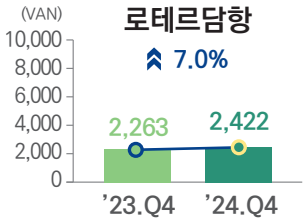


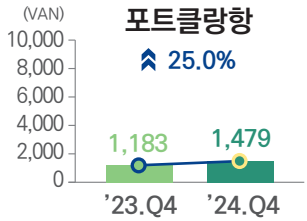
세계 주요 항만 평균 하역량

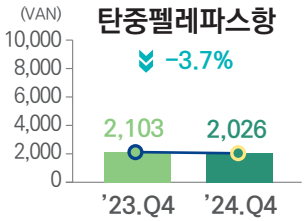


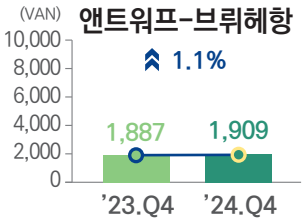


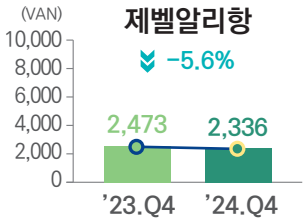


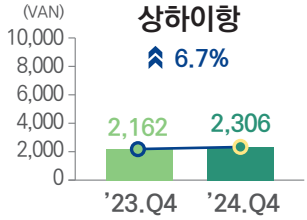


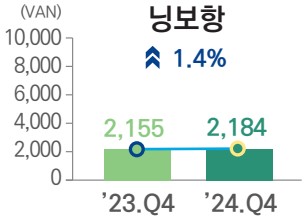


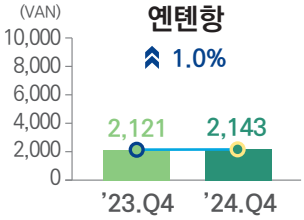


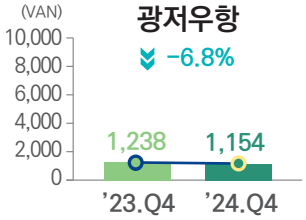


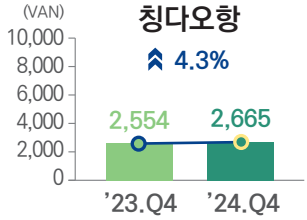


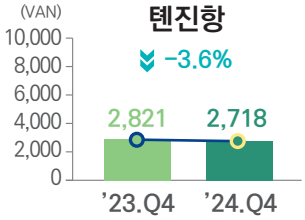


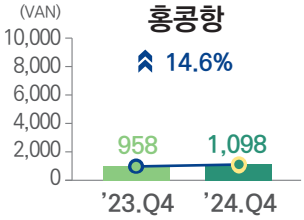


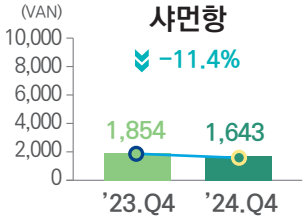


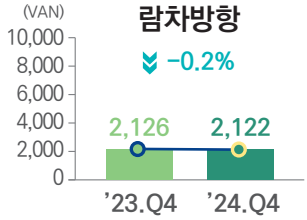


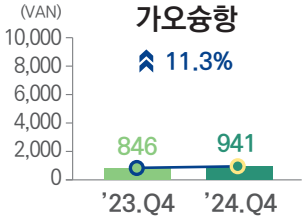


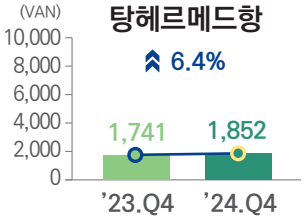










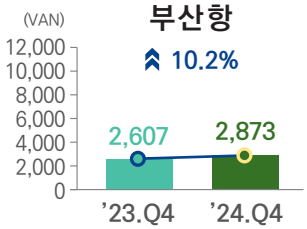


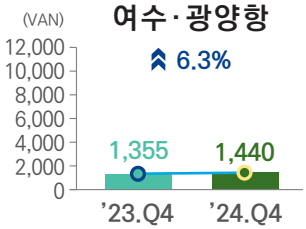
- '24년 4분기 국내 주요 항만의 전체 선형 기준 평균 하역량은 부산항(+8.5%), 광양항(+1.8%), 인천항(+8.7%) 모두 전년 동기 대비 증가세를 기록함
- 세계 주요 항만의 경우 포트클랑항(+25.0%), 홍콩항(+14.6%), 샤먼항(-11.4%), 가오슝항(+11.3%)이 두 자릿 수 이상 증감세를 기록함

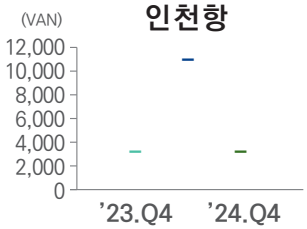
평균 하역량 Average Container Throughput

항만별 (8,000TEU 이상)

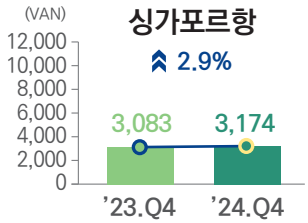
국내 주요 항만 평균 하역량

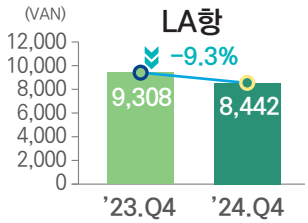


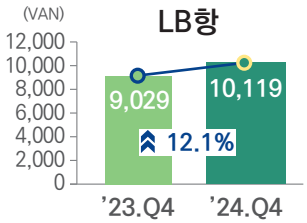


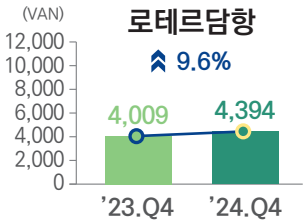


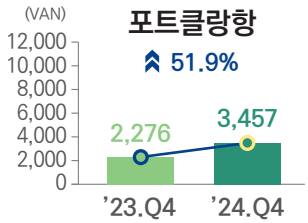
세계 주요 항만 평균 하역량

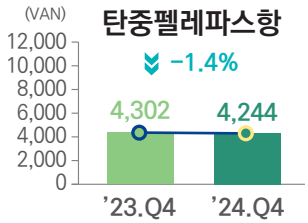


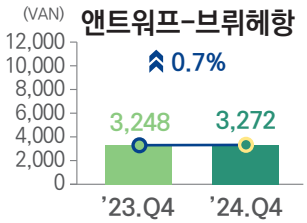


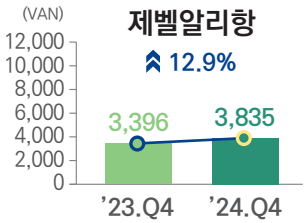


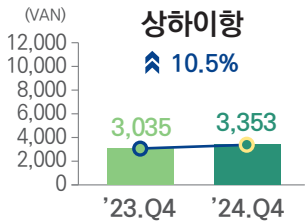


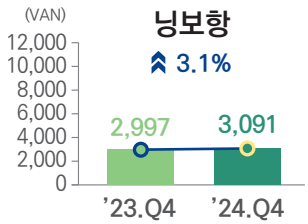


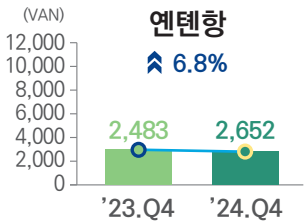


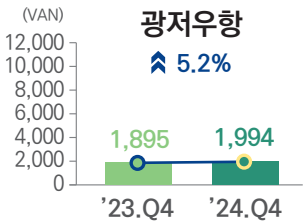


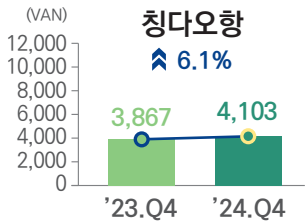


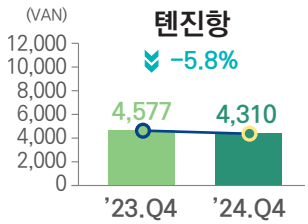


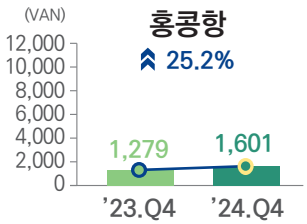


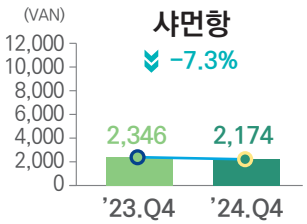


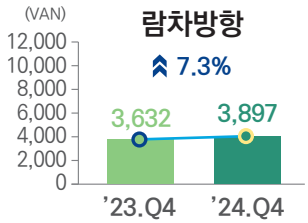


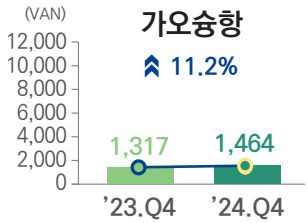


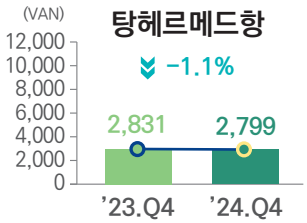












- 국내 주요 항만의 8,000TEU 이상 선형 기준 평균 하역량은 부산항(+10.2%), 광양항(+6.3%) 모두 전년 동기 대비 증가세를 기록함
- 세계 주요 항만 19개 항만 중 LA항(-9.3%), 탄중펠레파스항(-1.4%), 톈진항(-5.8%), 샤먼항(-7.3%), 탕헤르메드항(-1.1%) 등 5개 항만은 감소세를 기록하였으며, 11개 항만은 증가세를 기록함

평균 선형 Average Vessel Size

항만별 (전체 선형)

국내 주요 항만 평균 선형

항만	변동률	'24.Q4	'23.Q4
부산항	-0.6%	8,617	8,666
여수·광양항	-6.3%	9,524	10,165
인천항	35.1%	4,502	3,332

세계 주요 항만 평균 선형

항만	변동률	'24.Q4	'23.Q4
싱가포르항	-1.7%	7,643	7,775
LA항	-1.9%	8,174	8,337
LB항	-1.2%	10,074	10,198
로테르담항	-7.6%	8,370	9,058
포트클랑항	-0.5%	5,051	5,077
탄중펠레파스항	-11.1%	5,485	6,172
앤트워프-브뤼헤항	-6.3%	6,214	6,629
제벨알리항	-27.3%	5,793	7,963
상하이항	-4.5%	8,978	9,399
닝보항	-1.4%	9,507	9,637
옌톈항	-6.1%	11,105	11,832
광저우항	-14.3%	7,611	8,880
칭다오항	-1.0%	8,771	8,860
톈진항	-5.9%	9,914	10,535
홍콩항	-2.7%	6,820	7,010
샤먼항	-10.6%	8,714	9,745
람차방항	-6.2%	4,580	4,881
가오슝항	-1.2%	6,208	6,287
탕헤르메드항	-0.9%	6,476	6,534

- '24년 4분기 국내 주요 항만의 평균 선형은 부산항(-0.6%), 광양항(-6.3%)은 전년 동기 대비 감소세를 기록하였으며, 인천항(+35.1%)은 증가세를 기록함
- 세계 주요 항만 19개 항만에서의 평균 선형은 모두 전년 대비 감소세를 기록하였으며, 특히 탄중펠레파스항(-11.1%), 제벨알리항(-27.3%), 광저우항(-14.3%), 샤먼항(-10.6%)이 두 자릿수 이상 감소세를 기록함

평균 선형 Average Vessel Size

항만별 (8,000TEU 이상)

국내 주요 항만 평균 선형

항만	증감률	'24.Q4	'23.Q4
부산항	↗ 0.6%	12,913	12,842
여수·광양항	↗ 2.3%	12,823	12,538
인천항	–	–	–

세계 주요 항만 평균 선형

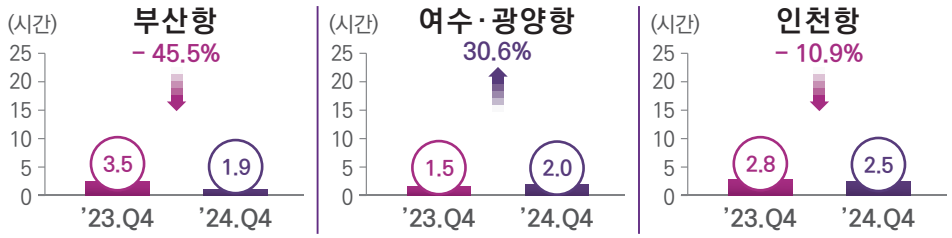
항만	증감률	'24.Q4	'23.Q4
싱가포르항	↗ 2.0%	14,043	13,762
LA항	↘ -5.5%	10,826	11,458
LB항	↗ 11.7%	12,336	11,045
로테르담항	↘ - 7.2%	14,805	15,952
포트클랑항	↗ 2.6%	13,785	13,433
탄중펠레파스항	↘ - 2.1%	13,719	14,014
앤트워프-브뤼헤항	↘ - 0.7%	13,370	13,467
제벨알리항	↘ - 5.3%	12,339	13,023
상하이항	↘ - 1.4%	13,829	14,026
닝보항	↗ 1.5%	13,794	13,592
옌톈항	↗ 2.4%	14,377	14,043
광저우항	↗ 0.4%	14,912	14,854
칭다오항	↘ - 0.5%	13,777	13,851
톈진항	↘ - 3.5%	16,731	17,342
홍콩항	↗ 0.3%	12,450	12,412
샤먼항	↘ - 2.1%	12,930	13,206
람차방항	↗ 6.8%	12,842	12,026
가오슝항	↘ - 0.2%	13,601	13,622
탕헤르메드항	↘ - 4.8%	12,602	13,240

- 국내 주요 항만의 8,000TEU 이상 선형 기준 평균 선형은 부산항(+0.6%), 광양항(+2.3%) 모두 전년 동기 대비 증가세를 기록함
- 세계 주요 항만 19개 항만 중 11개 항만이 전년 대비 감소세를 기록, 8개 항만은 증가세를 기록하였으며, 특히 LB항(+11.7%)은 두 자릿수 이상 증가세를 기록함

평균 대기시간 Average Waiting Time

항만별 (전체 선형)

국내 주요 항만 평균 대기시간



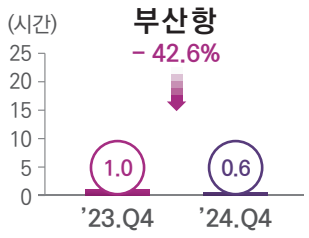
세계 주요 항만 평균 대기시간

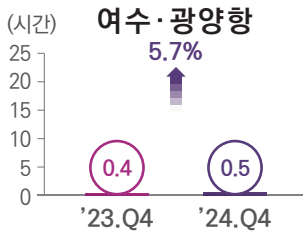
- '24년 4분기 국내 주요 항만의 평균 대기시간은 부산항(-45.5%)과 인천항(-10.9%)에서 전년 동기 대비 감소한 반면, 광양항(+30.6%)은 증가함
- 세계 주요 항만 19개 항만 중 9개 항만이 전년 대비 평균 대기시간이 감소하였으며, LB항(+394.4%), 옌톈항(+95.8%), 가오슝항(+61.3%)은 높은 증가세를 나타낸 반면, 람차방항(-79.2%), 톈진항(-60.5%), 칭다오항(-49.1%), 싱가포르항(-48.6%) 등은 대기시간이 큰 폭으로 감소함

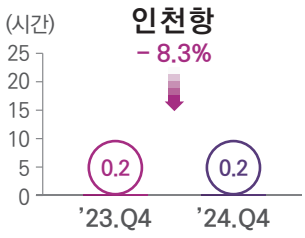
평균 대기시간 Average Waiting Time

항만별 (8,000TEU 이상)

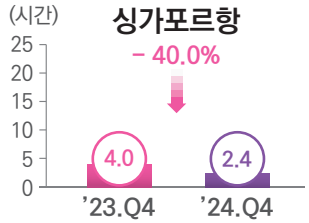
국내 주요 항만 평균 대기시간

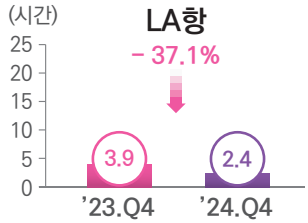


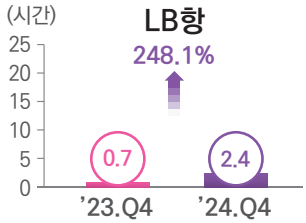


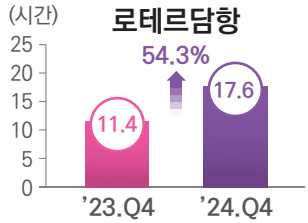


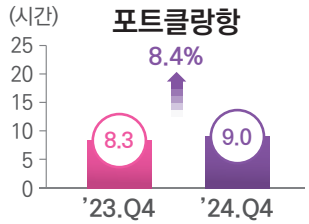
세계 주요 항만 평균 대기시간

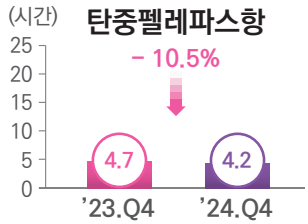


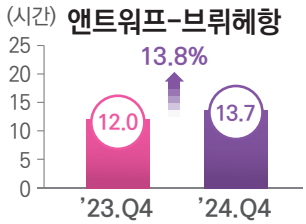


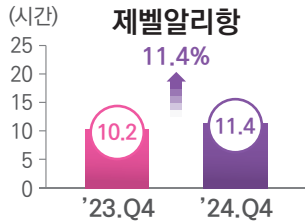


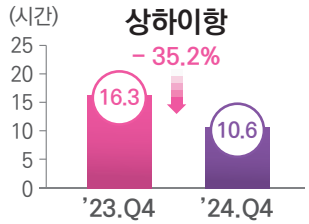


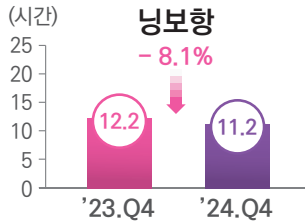


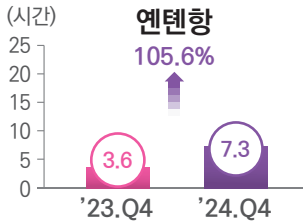


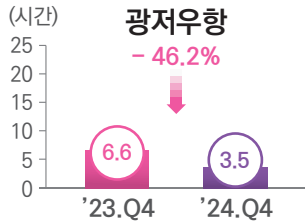


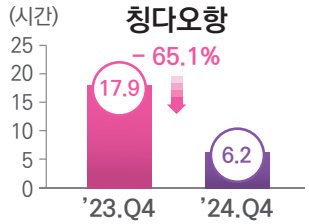


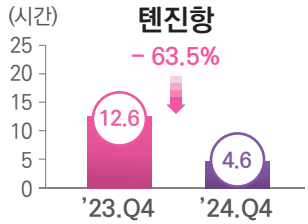


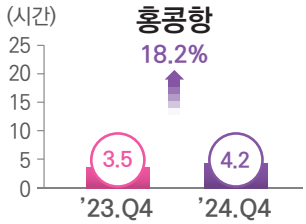


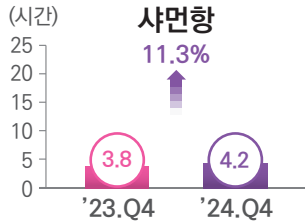


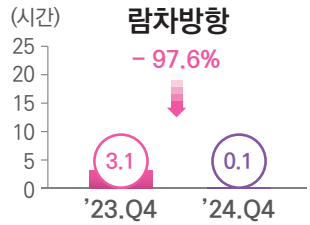


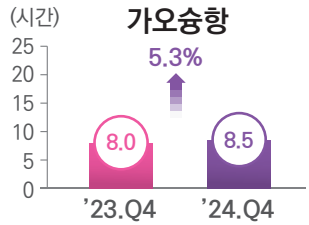


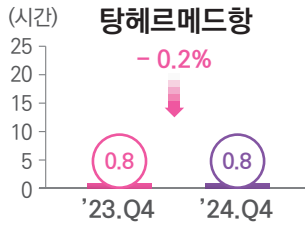












- 국내 주요 항만의 8,000TEU 이상 선형 기준 평균 대기시간은 부산항(-42.6%), 인천항(-8.3%)이 전년 동기 대비 감소, 광양항(+5.7%)은 증가하였으나, 모두 1시간 미만으로 낮은 수준을 기록함
- 세계 주요 항만의 8,000TEU 이상 선형 기준 평균 대기시간은 19개 항만 중 10개 항만이 전년 동기 대비 평균 대기시간이 감소하였으며, LB항(+248.1%), 옌톈항(+105.6%), 로테르담항(+54.3%)은 높은 증가세를 나타낸 반면, 람차방항(-97.6%), 칭다오항(-65.1%), 톈진항(-63.5%) 등은 대기시간이 큰 폭으로 감소함

부 록

서비스 지표 정의

선석 생산성 (Berth Productivity)

선석 접안 당 컨테이너 양적하 횟수를 나타낸 지표(총 양적하 횟수/선석 접안시간)

$$BP(k) = \frac{\sum_{i=1}^{n} \frac{CM_i}{ST_i}}{n}$$

$BP(k)$ = k항의 선석 생산성(Berth Productivity)
i = 컨테이너선 척수(i = 1,2,3,...,n)
ST_i = i 컨테이너선의 양적하 시간
CM_i = i 컨테이너선에서 처리된 총 컨테이너 작업량(Moves)
k = 컨테이너 항만(k = 1,2,3,....,m)

순선석 생산성 (Net Berth Productivity)

접안된 선박의 하역작업 개시 시간부터 작업종료까지의 크레인 총 작업시간당 컨테이너 양적하 횟수를 나타낸 지표(총 양적하 횟수/크레인 총 작업시간)

$$NBP(k) = \frac{\sum_{i=1}^{n} \frac{CM_i}{NST_i}}{n}$$

$NBP(k)$ = k항의 순선석 생산성(Net Berth Productivity)
i = 컨테이너선 척수(i = 1,2,3,...,n)
NST_i = i 컨테이너선의 총 크레인 작업 시간
CM_i = i 컨테이너선에서 처리된 총 컨테이너 작업량(Moves)
k = 컨테이너 항만(k = 1,2,3,....,m)

평균 하역량 (Average Container Throughput)

컨테이너선 1척 당 평균 컨테이너 하역 물량을 나타냄 (VAN)

$$ACT(k) = \frac{\sum_{i=1}^{n_i} CM_i}{n}$$

$ACT(k)$ = k항의 컨테이너선 평균 하역량(Average Vessel Size)
i = 컨테이너선 척수(i = 1,2,3,...,n)
CM_i = i 컨테이너선에서 처리된 총 컨테이너 작업량(Moves)
k = 컨테이너 항만(k = 1,2,3,....,m)

평균 선형 (Average Vessel Size)

항만을 입출항하는 컨테이너선의 평균 크기를 나타냄 (TEU)

$$AVS(k) = \frac{\sum_{i=1}^{n} VS_i}{n}$$

$AVS(k)$ = k항의 컨테이너선 평균 선형(Average Vessel Size)
i = 컨테이너선 수(i = 1,2,3,...,n)
VS_i = i 컨테이너선의 선형
k = 컨테이너 항만(k = 1,2,3,....,m)

평균 대기시간 (Average Waiting Time)

항만에 접안한 컨테이너선이 정박지에서 대기한 평균 시간을 의미함 (시간)

$$AWT(k) = \frac{\sum_{i=1}^{n} WT_i}{n}$$

$AWT(k)$ = k항의 컨테이너선 평균 대기시간(Average Waiting Time)
i = 컨테이너선의 입항 횟수(i = 1,2,3,...,n)
WT_i = i 번째 입항한 컨테이너선의 정박지 대기시간
k = 컨테이너 항만(k = 1,2,3,....,m)

부 록

서비스 지표 산정방법

IHS Markit 원자료에서 아래의 조건을 만족하는 선박을 대상으로 선석생산성, 순선석생산성, 평균 하역량, 평균선형을 산정함

1) 컨테이너선 선형이 최소 150TEU 이상인 선박
2) 컨테이너 작업물량이 300TEU 이상인 선박
3) 선석 접안시간 최소 1시간 이상인 선박
4) 위의 3가지 조건을 동시에 충족하면서 연간 52회 (1년=52주, 주 1항차) 샘플이 있는 항만을 대상으로 함

선박의 실시간 좌표 및 속도가 기록된 AIS(Auto Identification System) 데이터를 활용하여 아래의 방법에 따라 대기시간을 산정함

1) 5노트 이하의 컨테이너선 기록을 이용하여 산정
2) 컨테이너부두에 실제로 정박한 선박의 정박지 대기시간만을 산정
3) 부두 및 정박지의 시설 위치는 AIS 데이터와 함께 World Port Index, IHS Markit Ports & Terminals Guide, Google Earth 등을 종합적으로 활용하여 파악

연구책임자

최석우 항만수요분석연구실장

연구진

하태영 항만수요분석연구실 연구위원
이기열 항만수요분석연구실 연구위원
이화섭 항만수요분석연구실 전문연구원
신정훈 항만수요분석연구실 전문연구원
이나영 항만수요분석연구실 전문연구원
김영훈 항만수요분석연구실 전문연구원
최상균 항만수요분석연구실 전문연구원
조아현 항만수요분석연구실 전문연구원
조성현 항만수요분석연구실 연구원

감 리

김근섭 항만연구본부 본부장

세계 컨테이너 **항만 서비스 지표** 2024년 4분기

발행일 2025년 2월 21일
편집·발행인 **김종덕** 원장
발행처 한국해양수산개발원 항만연구본부 **항만수요분석연구실**
49111 부산광역시 영도구 해양로 301번길 26(동삼동)
TEL. 051-797-4800, FAX. 051-797-4810
편집디자인 ㈜디자인월드